Emerald International Journal of Sociology and Social Policy

Women's Participations in Economic and NGO Activities in Bangladesh: An Empirical Study on the Bangladesh Demography and Health Survey (BDHS)

Journal:	*International Journal of Sociology and Social Policy*
Manuscript ID	IJSSP-09-2015-0097.R2
Manuscript Type:	Original Article
Keywords:	economic sociology, gender, Labour market, Women

Women's Participation in Economic and NGO Activities in Bangladesh

Abstract

The study aims to examine the key factors associated with women's involvement in economic activities and also in NGO sectors in Bangladesh. The data come from the 2007 Bangladesh Demographic and Health Survey (BDHS) which is a nationally representative dataset. Quantitative analyses have been performed to tease out important factors associated with both economic as well as NGO activities. It was found that age, marital status, number of children living in the household, place of residence, geographical location, education, partner's education and a wealth index are important factors. Two policy implications have emerged from the study: i) women's economic activities are still low in Bangladesh, with a majority involved in the farming, agriculture and poultry sectors; ii) those who are involved in the labour market generally come from poor backgrounds, have very little education, live in the North-Western geographical region, and have a large family living in the same house. The findings also provide interesting scenarios as to why poorer women are more likely to continue in their employment as well as get involved in Non-Governmental Organizations' (NGO) activities in Bangladesh. The study indicates that the potential barriers for Bangladeshi women to engage in labour market activities and these findings helps to understand and may reinforce the case for reshaping the Government's labour policies. It is anticipated that enhancing women's participation in economic activities and third sectors has positive impact on overall changes to family, community as well as country levels.

Key words: Women, female labour market participation, NGOs, logistic regression, poverty, economic activity, microcredit, Bangladesh

Introduction

Women's contributions to economy and third sectors are subject of interests in contemporary literature particularly in social sciences (Amin et al., 1998; Kabeer, 2005; Pitt et al., 2006; Rahman and Khan, 2013; Bradshaw et al., 2013; Verick, 2014). As Muslim majority and developing country, Bangladesh is immensely important to researchers to see how the country progresses its sustainable development issues including gender equity in all segments of society. Economic participation of women has triggered many folds because of micro-credit programme widely introduced in Bangladesh. Over the last two decades the micro-credit programme has been very popular and a focal point of discussion for reducing poverty in developing countries. According to the Micro-Credit Summit (2012)[1] almost 205.30 million poor people around the world are involved in micro-credit activities. Of these, 137.55 million first-time borrowers are the poorest[2] and over 82 per cent of them are women. The Micro-Credit Summit campaign aims to bring 175 million poorest families into the programme by the end of 2015 with a focus on providing loans and business and financial services to women, so they can become self-employed. It is also reported that women who are involved in micro-credit programmes, became confident and able to lead a decent life along with their family members (Kabeer, 2005; Osmani, 2007; Kato and Kratzer, 2013; Rahman and Khan, 2013). They had also become better able to tackle various shocks (such as flooding) because their family income had increased and through the acquisition of rich social networks through Non-Governmental Organisations (NGOs) that provide support enabling the women to get through any difficulties. It is a great transformation, particularly for poor women living in rural areas.

The World Bank (2012) has reported that about 1.29 billion people were living on less than $1.25 a day in 2008 around the world. The Bangladesh Bureau of Statistics (BBS, 2010), household income and expenditure survey revealed that the poverty rate in Bangladesh had decreased from 40 per cent in 2005 to 31.5 per cent in 2010. NGOs and Micro Finance Institutions (MFIs) in Bangladesh had targeted women to bring them into the programme and had provided different sorts of services for them including education, maternal health and family planning, and training in income generating activities. According to the NGO Affairs Bureau Bangladesh (2011) there are over two thousand MFIs in the country all working with poor women to pull them out of poverty. According to BRAC Bangladesh (2011), about 2.32 million women in Bangladesh have received various types of services including asset, soft loan and financial support. BRAC Bangladesh has also provided training in income generating activities (IGAs) to 1.33 million women and provided maternal services to poor women living in rural areas in Bangladesh. They have provided urban maternal, neo-natal and ante-natal services to 5.7 million women in Bangladesh. The Grameen Bank (2011) claims it has 8.35 million micro-credit borrowers in Bangladesh of which 96 per cent are women. ASA Bangladesh (2011) is another big NGO which has more than 5.01 million borrowers in Bangladesh of which 79 per cent are women.

As indicated, the vast majority of the beneficiaries of micro-credit loans are women and there are several reasons for this. Epstein and Kim (2007) explained that foreign policy makers have increasingly focused on micro-credit programmes for women because they have recognised that it is not only a form of gender discrimination to leave women aside from access to credit facilities, but also an obstacle to economic and social development. Micro-credit programmes have brought women into the cash economy and are encouraging them to be trained in entrepreneurial skills which help to stimulate economic growth. Some studies have suggested that MFIs tend to lend money to women because they are more likely to repay the loans than are men and they are also more likely to spend their incomes on the welfare of their families. Women are playing substantial roles in sustaining micro-credit programmes because of their low drop-out and high recovery rates that are further encouraging the trend of targeting women (Khandker et al., 1995).

Women economic activities seemed to be unfolded during the phase of last world economic recession and this reminds us the sold grounding economic power of their activities in society including third sectors. Although women are likely to have been engaged in various activities for the betterment of their economic situation, yet little is known on the extent to which they seem to be influenced by important factors. Moreover, study is needed to understand how women contributions help families economically during the period of worse economic recession.

This paper aims to examine women's participation in economic as well as NGO activities in Bangladesh. The objective is to present some empirical evidence of recent patterns and trends in gender roles in economic activities, explain the factors that work behind the process, and assess the determinants of women's involvement in NGO activities in Bangladesh.

Economically Inactive versus Non-employed Women in Bangladesh

Labour Force Survey (LFS, 2010) clearly stated that the number of people who are engaged in household work, students and others which include beggars, pensioners, income recipients and disabled are economically inactive. Therefore, in particular, women who are engaged in household works such as caring child, cooking food and taking of elderly are considered as economically inactive. Efroymson at el. (2006) revealed that women in Bangladesh work as much as 16 hours per day at various unpaid household tasks including family's productive activities such as farm work, helping in family business and so on. However, due to the low level of education amongst women in Bangladesh, they are economically dependent on male relatives in three phases throughout their lifetime, for example first father, then husband and then the son. According to LFS (2010) of the total 38.9 million economically inactive people in Bangladesh, 30.6 million inactive women and the rest of them are men. Of the total inactive women, as many as 25.1 million (81.7 per cent) were engaged in household works followed by students 2.2 million (10.3 per cent) and 3.3 million (8.0 per cent) were others. On the other hand, of the total 8.4 million male inactive population, only 1.4 million (13.9 per cent) were engaged in household work and 4.6 million (54.6 per cent) were student and 2.6 million (31.5 per cent) were others.
The definition of "unemployment" is recommended by the International Labour Organisation (ILO) based on the context of Bangladesh which is followed by LFS. A person aged 15 years and above is considered as unemployed if s/he did not work at all, even an hour in the reference week, during the preceding week of the survey and was actively looking for job or was available for work but did not work due to illness or because there was no work available. LFS (2010) also stated that people who work in family business less than 16 hours per week and if they do not get paid for their job they are also unemployed. However, LFS (2010) argued that many of those who considered as unemployed generally do some works in family enterprise or other places; therefore they are not actually unemployed. The above unemployment definition may be a problematic, if the survey was conducted during the lean season then we would find the rate of unemployment is higher and vice-versa. For example, a large number of people remain unemployed mainly two times a year (during March-April and again September-November) in the North-Western region of Bangladesh. It could also be a fact that since many women who assist with family business and farming along with their full time job (household works), they turned out to be either unemployed because they do not actively looking for job or economically inactive as explained elsewhere. On the contrary, the term "non-employed" includes people like stay-at-home, moms and retired people, who are not employed but may not be looking for work (i.e., out of the work-force at the time of survey). Thus, if a woman is found to be actually engaged in economic activities in Bangladesh is considered in the paper as being "employed".

Trends in Female Labour Force Participation

Bangladesh is a densely populated country with a population over 155 million people the vast majority of whom live in rural areas. The economy of the country is predominantly dependent on the service sectors, agriculture,

garment exports, and some foreign remittances. According to the Bangladesh Bureau of Statistics (BBS, 2008) the number of women in the labour force has increased from 5.4 million in 1995-96 to 12.1 million in 2005-06 whereas, in the same period, the number of men in the labour force has increased from 30.6 million to 37.3 million. There were 23 million working age population (15 years or more) in urban areas and 72 million in rural areas (Khuda, 2014). Generally, female labour force participation in Bangladesh has been low compared to male, at just one third of the males in aggregate. A similar type of gender gap in labour force participation has been found in other studies (Hossain et al., 2004; Khuda, 2014). However, although there is no noticeable change for male participation rates within the period (1999-2010), Labour Force Survey (LFS) statistics show, at country level, a clear increasing trend for female participation rate while this is being declined in India in 2010-2012 (Verick, 2014). This is an encouraging scenario.

Table 1 shows labour force participation for the population aged 15 years or more by age and gender. The distribution of labour force participation indicates that there is still a huge gap in economic activity rates between males and females as well as across age cohorts. Overall, men remain are found to be the more dominating labour force in Bangladesh. Male participation is especially higher in older ages (60 years or more) in relation than to its female counterparts. On the other hand, women's participation rate is increased noticeably for the age cohort 20-49. This could be explained by the fact that the revolution of increase in girls' school enrolment which started two decades ago and that has tremendously influenced increasing the women labour force participation.

Table 1 about here

Nature of Women Economic Activities in Bangladesh

In Bangladesh, women tend to have engaged in homestead management while men usually work outside home such as in field agriculture, trading, marketing and so on. Less participation in official agricultural statistics is primarily due to the deeply embedded social and cultural norms of patriarchy (a set of social relations with a material base that enables men to dominate women) and 'purdah' that prescribes seclusion of women including severe restrictions on their movement outside of their homes (Paris et al. 2004; Asadullah and Wahhaj, 2012). The International Rice Research Institute (IRRI) conducted Focus Group Discussions (FGD) among men and women separately covering 62 villages in 57 Districts in Bangladesh. This nationwide survey was initially conducted in 1987 and then again in 2000 to gain an understanding and provide information about women's economic activities in Bangladesh. In this study, the IRRI found that cooking food for family members is the major responsibility of women. Preserving rice seeds is also done predominantly by women more than men and they are also very vigilant about household maintenance, reproductive activities, taking care of elderly relatives, nursing family members when they get sick and tutoring own children. Women have also been performing other economic activities like raising cattle and poultry, also vegetable production, gardening, post-harvest, agro-forestry and most importantly income increasing or expenditure savings activities (Kabeer, 2001). There are also seasonal variations of women's economic activities in the rural areas of Bangladesh (Paris et al., 2004). For example, during the peak seasons of rice production, men are busy with the actual harvesting and women with post-harvesting activities. There are two seasons during the year for rice production that take about six months each with a special type of production during the winter season called *Boro* in Bengali that takes place in some parts of Bangladesh. Women in those parts of the country are usually busy with post-harvesting activities in the winter season as well. Women sew clothes, make indigenous mats and quilts, different types of baskets, foodstuffs and then sell them either to the local market or their neighbours during the off-peak seasons. Moreover, to increase family incomes, women have been raising cattle and poultry in order to sell milk and eggs as well as to meet their family's demand for proper nutrition. Women in rural areas also construct mud stoves for boiling large volumes of rice; make baskets for storing farm products and different types of quilts all for extra income to support their families. According to Bhatt (1989) the women who have been engaged in these activities have been labelled as 'marginalised', 'informal, 'unrecognised, 'peripheral', and 'black economy workers' implying that they are inferior and insignificant while in actual fact, they are making a major contribution to the central economy. Bhatt suggests that it would be better to call these women workers 'self-employed' to enhance their status. Thus women have actually been engaged in economic activities throughout the year to help boost their family incomes. It is unfortunate that their contribution has remained invisible in the economy and even sad when we see it is not recognised fully or appreciated by the men in Bangladesh. However, The Bangladesh Home Workers Women's Association (BHWA) revealed that the estimated annual contribution of home-based workers to GDP is about TK.150 billion (Islam, 2006). Some studies pointed out that the men even do not appreciate women's household work in Bangladesh and their economic activities (Mehra, 1997; Sen, 1997; Bhatt, 1989; Efroymson et. al., 2006; Sadaquat and Sheikh, 2011). Waring (1998) pointed out that in the 1961 Census women's household work was defined as "productive economic activity"

but in the 1974 Census (the First Census after becoming independence in 1971) women's household work was defined as "housewife". Therefore, after the independence, Bangladeshi women did not change their activities but the perception of women activities has changed over time.

In the 1980s, a plethora of studies have been conducted on women's involvement in homestead production activities in Bangladesh (Halim and McCarthy, 1985; Hossain et al., 1988). The role of women economic activities on development and poverty reduction continues to be an important area of investigation in Bangladesh (see for example, McCarthy and Feldman, 1988; Rothschild and Mahmud, 1989; Jahan, 1990; Amin and Pebley, 1994; Hashemi et al., 1996). Shah (1986) conducted a study to investigate the role of women's economic activities between 1951 and 1981 in Pakistan. This study found that the socio-economic status of the households such as ownership of assets, husband's education and observance of Purdah are having an impact on the ability of women to participate in economic activities in Pakistan and Bangladesh (Kabeer, 2001).

The majority of the NGOs in developing countries concentrate on poor people and small-scale entrepreneurs to stimulate the development process. For example, most of the Self-Employed Women's Association (SEWA) in India and BRAC and the Grameen Bank in Bangladesh (Sen, 1997), focused especially on improving women's economic status as well as changing the perceptions of men towards women. As a result, the government and development agencies or donors including DFID, WFP, UNICEF and WB began to rely on NGOs in developing countries to accelerate the growth of the development process. Mehra (1997) revealed that women's capabilities, as part of building human capital, have been increased through improvements in access to education and a better health care service. However, there has been much slower progress in terms of women's choices in accessing economic opportunities. Mehra (1997) is also concerned that globally only one-third of women are economically active whereas less than half of women in East Asia and the Sub-Saharan are economically active. Azid et al. (2001) found that women's participation in the labour force or involvement in economic activities depended significantly on the number of children, age, education, poverty status, women's wage rate and predicted male wage rate (Malik et al. 1994; Aly and Quisi, 1996). It is, however, recognised that women work more hours than men particularly in low-income households, more hours in agricultural than in non-agricultural economic activities, and more hours as unpaid family labourers than as managers. Even if they do most of the work, men mostly control decision-making and they have ownership of the household resources. As we have seen, since the women does not have access to and control over household resources such as land and other consumer durables, they are further disadvantaged because of traditional cultural and social norms that confer power and privilege on men (Paris et al., 2004). Men target institutional services for career development and even when women are targeted, such as in micro-credit programmes, women are often used as a front and men keep control over managing the resources. Thus, it is acknowledged that the women are disadvantaged for not being able to acquire knowledge about farm and non-farm production systems and technologies from the service sectors (Kabeer, 2001). Women's contributions to household income and well-being through various economic activities have been going on for a long time but, as we have indicated earlier, their contribution to the economy has largely been ignored (Elora, 2004; Bradshaw et al., 2013). Paris et al. (2004) criticised that since the women are not to be seen outside their immediate family members, they are not involved in field agricultural activities as well as not allowed to go public places such as market. Thus, the contribution of women's activities to the economy and even their existence remained invisible to the researchers. However, many women from the poor households are getting involved in micro-credit programme and attained co-breadwinner status within the family through assisting their male counter-parts with post-harvest agricultural activities outside the home because of extreme poverty and food deficiency (Karim and Law, 2013). Torri and Martinez (2011) conducted a research on a women's community-based enterprise known as Gram Mooligai Company Limited (GMCL) in Tamil Nadu, India that is promoted by local NGOs in the Tamil Nadu State. They aimed at assessing the impact of GMCL on capacity building of women and local development through the enterprise that is run by women. Their study showed that this project has an important economic role such as increasing the managing, marketing and enterprise skills of women as well as enhancing their productive capacity. It also showed that GMCL were not only limited to an economic role in society but involvement also brought changes in the women's personal and social lives that helped to change perceptions towards women in India.

In the present paper we define economic activities that are either generating income for the households or saving households expenditure for the acquisition of goods from the market. This includes employment in the agricultural and non-agricultural labour market, but also unpaid work for the household in crop cultivation, homestead gardening, livestock and poultry raising, fishing, cottage industry, transport operation, construction, business, and personal services. It excludes unpaid activities such as unpaid domestic activities. There are many other activities being done mostly by women that are quasi-economic in nature that are not valued in national income accounting. Examples are food-processing and preparation of meals for family members, care of

children, the elderly and sick members of the household, and tutoring of children. If the household had to hire workers to perform these jobs then it would involve some expenditure (Efroymson at el. (2006).

The Methodology

The Data

The data for this study was extracted from the Bangladesh Demographic and Health Survey (BDHS) 2007, a nationally representative cross-sectional survey that is widely used by research communities. The detailed methodology of the survey including the data collection method and quality of the data was explained in the national report of the survey (BDHS, 2007). In short, the survey covers the population residing in private dwelling units in Bangladesh and was based on the sampling frame of the 2001 population census. The sample was selected using a two-stage stratified technique, where 361 primary sampling units (PSUs) were selected in the first stage (227 from rural areas and 134 from urban PSUs). All households in the selected PSUs were recorded from January to March 2007. The resulting list of households was used as the sampling frame for selection of households in the second stage. On an average, 30 households were selected from each PSU using an equal probability sampling technique. About 10,819 households were selected for the survey where 10,461 were occupied. Interviews were successfully completed in 10,400 households (99.4% of total households). A total of 11,178 eligible women aged 15-49 were identified in the selected households and finally 10,996 (6,845 from rural and 4,151 from urban) were interviewed for the women's questionnaire (the response rate is 98.4 percent). Thus, the 10,996 women sample is used for the analysis in the paper. BDHS is nationally representative household survey that has been conducted in the country since 1993. It has been conducted in a regular interval preferably once in every two years in order to generate important resource for the monitoring of vital statistics and population health indicators in Bangladesh. For many low and middle income countries this DHS survey is the only reliable source of information that can be used to carry out comparative studies across the world.

Tools of data collection and processing

The BDHS used the standard questionnaires from MEASURE DHS+ model questionnaire. All questionnaires were pre-tested before data collection. Information was collected about socio-economic and demographic characteristics, health and lifestyle factors, marriage and family planning, health care facilities, HIV/AIDS, sexually transmitted diseases (STD), and domestic violence. To ensure the quality of data, qualified personnel from Mitra and Associates, along with high officials from the National Institute of Population Research and Training (NIPORT) were employed. Data processing was carried out between 16 April and 31 August 2007 using CSPro including editing, coding of open-ended questions, data entry, and editing inconsistencies observed in the computer programme. Each stage of the survey was carefully monitored by the USAID, NIPORT, Mitra and Associates, Ministry of Health, and Macro International USA (BDHS, 2007).

Variables used for statistical analysis

Variables were carefully selected from the earlier studies to examine their effects on economic as well as NGO activities in Bangladesh. The description of variables and their measures along with BDHS survey variable codes are presented in Table 2. Moreover, the variable code also helps the readers to view and check each question if interested. Variables are further classified according to their causality and the use of statistical models and they are described as follows:

Dependent variables

Women's occupations are considered to examine the pattern of their economic engagement by their socioeconomic and demographic backgrounds. There is a long list of occupational categories in the BDHS survey which are reduced to a small number of categories as follows: i) non-employed, ii) professional, iii) business (small and large business), iv) semi-skilled labour (home based manufacturing; factory worker, blue collar services; semi-skilled labourer), v)farmer/poultry worker (land owner; farmer; agriculture worker; fisherman; poultry and cattle raising), vi) unskilled labour (rickshaw driver, brick breaking, road building construction work; domestic servant), vii) others (student; retired; other). Then two dichotomous dependent variables were considered to study women's participation in economic activities, i) women's participation in employment for the last 12 months (either employed or non-employed); and ii) women's involvement in NGOs activities as being actively involved or not involved at all.

Independent variables

From the large set of variables, we selected only some of the relevant variables namely, age of the women, marital status, number of living children, urbanisation, geographical regions, educational status of respondent's and their partner's, asset quintiles and involvement in NGOs. Definition and measurement of the variables are illustrated in Table 2. The variables were selected based on existing literatures and theories (Becker, 1961; Hossain et al., 2004) on women's participation in economic activities.

Statistical tools used for analysis

Firstly, we performed a univariate analysis and presented descriptive information about the study sample along with women's participation in employment activities by selected variables. Secondly, the bivariate association of two outcome variables (women's participation in employment and women's participation in NGO activities) with each of the selected independent variables (including P-values of the test statistics for testing the null hypothesis of no association) was reported based on the Chi-square test (Chan, 2003). Finally, we performed a univariate as well as a multivariable binary logistic regression analysis for both dichotomous dependent variables. Univariate analysis provides the direct effect of a variable without controlling for any covariates and we call it the *unadjusted effect*. On the other hand, the *adjusted effect* of a variable is calculated when all remaining variables are controlled for. We reported the odds ratio (OR) and the 95% confidence interval (CI) for adjusted and unadjusted cases to show summary findings of the univariate as well as multivariable models. The effect measures the likelihood of involvement in economic activity and the strength of the effect is captured by the odds ratios (each group is compared with the reference group). The reference groups are carefully selected in the paper and are consistent with past research and reliable in terms of sample size.

In brief, for a logistic regression model, women's participation in employment was dichotomized as "yes = 1, if participated in any employment in the last 12 months of the survey" and "no =0, if no participation in employment". Likewise, 1 is coded if a respondent belongs to an NGO, otherwise 0 is coded and thus we can also construct an appropriate logistic regression model for women's participation in NGO activities.

For general understanding, let Y denote a binary variable that equals '1' if the respondent has any employment and '0' for otherwise. Thus the following logistic regression model is fitted:

$$\textbf{logit(p)} = \textbf{log}\left(\frac{p}{1-p}\right) = \mathbf{b}_{\mathbf{o}} + b_1 x_1 + b_2 x_x + \ldots + b_k x_k$$

Where p is the probability when y = 1 and b_i (i = 1, 2, ..., k) are the linear regression coefficients, indicating the effects of the independent variables, $x_{i, \ldots} x_k$, and b_o is the intercept. A detailed explanation of the model can be found elsewhere (Khan and Raeside, 1997; Hosmer and Lemeshow, 2001; Chan, 2004).

Results and Discussions

Descriptive analysis

Table 2 shows the summary analysis of the characteristics of respondents used in the paper. It has been found that a vast majority of women (about 65%) are non-employed in the survey. However, 17.6% were engaged in farming and poultry-related works. More than 9% of women were employed in the semi-skilled labour sector, nearly 5% of them in unskilled labour or doing other types of jobs. Therefore, in the survey, about 35% of women were found to be employed for the last 12 months. The proportion of respondents was equally distributed across age cohorts 15-24, 25-34 and 45-49 years. The vast majority of women (93%) were currently married. About 11% of respondents reported that they had no children in their family with a majority having at least one child in the household. Nearly 77% of respondents live in rural areas and the rest 23% living in urban areas. In terms of geographical locations, a majority (31%) of respondents surveyed came from the Dhaka Division followed by 25% from Rajshahi Division, and 18% from Chittagong Division. The lowest proportion (6%) came from Barishal and Sylhet Divisions. In the survey, the highest proportion of women (34%) did not have any formal education and a small percentage (about 6%) had college and university level education. A similar trend was also observed in terms of partner's education. Women are more or less equally distributed

across the wealth index. Social activity (predominantly NGO economic activities) is becoming popular and socially acceptable in Bangladesh. Many NGOs are involved in micro-credit programmes for generating income activities among the borrowers (Rahman, 2010; Farazi, 2011). Lastly, it has been revealed that about 14% of women belong to an 'other organisation', followed by the Grameen Bank (13.4%) and ASA (11.1 %).

Table 2 about here

Table 3 describes women's economic status and occupations by selected characteristics. By and large most women are found to have no job at the time of the survey (higher for those aged below 24 years) and about 63 percent found to have no involvement in NGO activities. A small proportion of women were engaged in professional jobs, but the proportion is observed to be higher among those who are over 25 years old, married, have no children, live in urban areas and have the highest education along with a partner's highest level of education, and also are the richest and less involved in social activities. Women who were involved in business were relatively more active in NGO activities, had no formal education, live in the northern part of the country, were more likely to be divorced, separated, or widowed, aged over 35, and to have 3 or more children living in the household. Farming, agriculture and poultry were the important sectors where women were contributing significantly. Women who belonged to this group were comparatively older in age, presently married, with 3 or more children in the household, living in a rural area, coming from the northern part of the country, no formal education, no partner education, poorest of the poor and involved in NGO activities. The results help one to understand women's socioeconomic and demographic situations and how they are related to various employment activities in Bangladesh.

Table 3 about here

We observe that various factors are associated with types of employment activities in Bangladesh although some categories only had small samples. It is, therefore, worthwhile to examine how these factors are associated with economic activities of women during the past 12 months.

It is shown in Table 4 that age, marital status, number of living children, types of residence, geographical regions, education of respondent as well as partner's education, wealth index and involvement in NGOs are strongly related to engagement in work activity in Bangladesh. The χ^2 test with its *p-value* (zero or close to zero) shows the statistical significance. Table 4 also demonstrates the per cent distribution of women actively engaged in the workforce. For example, more women in the age group 25-49 are involved in work than in the 15-24 age group. Similarly, women with no education, no partner education, the poorest group of society and those involved with NGOs were found to be more economically active.

Table 4 about here

Likewise, Chi-squared tests were performed for the selected variables to examine whether any association existed between the variable NGO activities. As we have shown, almost all NGO activities are related to micro-credit programmes. It can be seen from Table 4 that age, marital status, number of children, type of place of residence, geographical regions, education of women and their partners, and the wealth index are found to be strongly associated with NGO activities. Women aged over 25 years are more likely to have an involvement in NGO activities compared to their younger counterparts. The higher the number of children in the household the greater was the chances of the head of the household, particularly women, of being involved in NGO activities. A higher proportion of women involved in NGOs were in a rural location than an urban location. The highest proportion of women involved in NGO activities had no formal education. A similar pattern was observed for a partner's education. Table 4 also shows that women from the poorer wealth cohort were likely to be more involved in NGO activities than their richer counterparts.

From the Pivotal analysis it is difficult to confirm the degree to which actual effects of independent variables and their categories. Therefore, we applied advanced statistical techniques to establish stronger relationships and tease out the effects of the variables in this study. The results are illustrated in Tables 5 and 6.

Logistic Regression Analysis

The results of a logistic regression analysis for women's participation in economic activities are presented in Table 5. Both univariate as well as multivariate logistic regression models were constructed to evaluate the effects of predictors for unadjusted and adjusted effects. Unadjusted effects of a variable may or may not be determinants of the outcome variable in the presence of other predictors. However, the adjusted effects of a predictor variable are obtained through multivariate analysis by controlling for other variables. Both effects are

being discussed here simultaneously in this section. It has been found that women aged over 25 years were more likely to be engaged in employment activity compared to the younger age cohort. The effect was found to be 1.796 times higher with 95% CI (1.595-2.021) for the age cohort 25-34 and 1.577 times higher with 95% CI (1.379-1.805) than the reference group 15-24 age cohort. Currently married women were less likely to have engaged in work even after controlling for other variables and were found to be 61.7% lower than divorced/separated/widowed group (OR=0.383, 95% CI: 0.327-0.449).

The number of living children had strong positive effects on economic involvement. It shows that the higher the number of living children in the household the higher was the chance of a woman participating in economic activities. In Table 5, those who had 3 or more children had a 1.614 times (95% CI: 1.402-1.857) higher chance of involvement in economic activities than those who had no living children. Similarly, women who had 1 or 2 children had a higher probability of being involved (Odds Ratio =1.487, 95% CI: 1.294-1.710 with p<0.000). However, the predictor becomes statistically insignificant when controlling for other variables in a multivariate model. This means that other factors may be more important than the number of living children when modeling economic activities in Bangladesh.

Place of residence was found to have a statistically significant effect on economic activities for women i.e., rural women are found to be 1.236 times more likely to engage in economic activities than urban areas (95% CI: 1.089-1.401, p<0.001). An opposite finding was observed in multivariate model (OR=0.747, p<0.001). It meant when all other variables were considered in the model, rural women were found to have a 25.3% lower likelihood to be employed as compared to women from a large city. This may be explained by the fact that urbanization is closely associated with other covariates in the model. Geographical region is considered as a predictor to estimate the effects of regional influences on continuing in economic activities. There are regional disparities in terms of income and job opportunities. For example, the North-Western region suffers from lack of job opportunities and low average incomes compared to the rest of the country. And because of that the Government has special programmes in those areas to support poor families tackling Monga[3] (seasonal food insecurity) in rural Bangladesh. The lean season reduces the people's access to income, which is a shock on their livelihoods and this fuels chronic poverty (Zug, 2006). The analysis reveals that women from the North-Western part of Bangladesh (Khulna, Rajshahi and Barishal) had higher chance (16.0%) of being involved in the workforce compared to women in Dhaka Division (OR=1.160, 95% CI: 1.052-1.280). In contrast, women from the South-Eastern part of Bangladesh (Chittagong/Sylhet regions) had a 48.4% lower chance of being involved compared to the Dhaka regions (OR=0.516, 95% CI: 0.457-0.583). North-Western region is poor compare to rest of the country and women seriously look for a job for survival. On the other hand, it is widely known that women from South-Eastern part of the country are restricted to their house. Therefore, they are less likely to get authorized for work outside home by their head of household who are usually men. Dhaka is often used as a reference category for comparative purposes as it is the central part of the country and we believe that selecting Dhaka as reference group can provide a fair judgment on the likelihood of changes in circumstances in other areas. The finding is consistent with the existing literature.

Women's education was found to have an important predictor role in engaging in economic activities. Generally, it shows that lower education is associated with less likelihood of being engaged in economic activities. A univariate model shows that women with secondary education had a 29.9% lower chance of engaging in economic activity compared to those women who possessed a higher level of education. This finding is also found to be consistent while controlling for other remaining variables in the model which means that women with secondary education were found to have a 45.1% lower chance for continuing in economic activity compared to women who possess a higher level of education. This is an expected finding which reveals that women education plays an important role in engaging economic participation. On the other hand, husband's education appears to have an insignificant factor which means it has no significant association with women participation in economic activities.

The wealth index is a good predictor to capture the probability of being involved in economic activities. As it can be seen from Table 5, relatively poor women are more likely to be involved in economic activities than the richest counterparts. The quintile shows that magnitude of the odds ratio is consistently changing with respect to various categories of the wealth index. For example, those who belong to the poorest, poorer wealth and middle wealth categories are found to have 2.578, 2.246 and 1.716 times higher chance of being engaged in economic activities than the richest wealth group respectively.

Women's involvement in NGO activities is used to examine whether it has any association with women's economic activities or not in this paper. It was found that women who were involved in NGO activities had an 88.4% higher chance (95% CI: 1.739-2.042) of continuing employment than those who were not involved at all.

This unadjusted effect was the sole direct effect of women's NGO participation on continuing employment. Similar findings emerged when controlling for all remaining covariates (OR = 1.621, 95% CI: 1.487-1.768, p<0.000). It is stressed that NGO activities encourage women to continue their employment. Micro-credit programmes have been running successfully in Bangladesh and a sizeable proportion of women are involved in at least one NGO activity. The NGO sectors employ a huge number of women and therefore it is worthwhile to investigate what factors are affecting NGO activities in Bangladesh.

Table 5 about here

Because a variable such as "women's involvement in NGO activities" is a dichotomous variable we also fit logistic regression model both for univariate as well as multivariate purposes and the results are shown in Table 6. The age of the women played an important role in their involvement with NGO activities. The findings revealed that the higher the age, the greater the likelihood of being involved in NGO activities. Married status is found to be statistically significant effect on involving in NGO activities. For example, the adjusted effect showed that currently married women were found to have a 55.2% higher probability of involvement in NGOs than any other group (OR=1.552, 95% CI: 1.314-1.834).

Women's participation in NGO activities may bring numerous benefits to the country such as fertility and a decline in mortality as well as raising health awareness and education. It has been found that women with a higher number of children are more inclined to be involved in NGO activities in Bangladesh. Both adjusted and unadjusted effects revealed that there were some consistent findings to support the statement that women generate money to feed and support the family and the tendency was higher the higher number of children (Table 6).

Urbanization has dominated some social science research because of its power to explain socio-cultural changes. In the paper we have considered it in order to examine how it may have influenced women to get involved in NGO activities. NGO activities are more likely to be concentrated in the relatively developed region (urbanized) where better transport facilities and government and private facilities are available (Sharma and Zeller, 1999). Therefore, people who live in the urban area or proximity to the urban area are more likely to participate in the NGO activities. However, many NGOs or micro-credit institutions such as Grameen Bank, BRAC and ASA are working across the country to bring poor women into the traditional financial system. It is worth mentioning here that according to the Micro-credit Regulatory Authority (MRA), there are about 34 million clients who are actively involved in NGOs activities and most of them are women from rural areas (MRA, 2011). Thus it could be argued that the women who live in the rural areas have the opportunity to involve in the NGOs activities because wider scope.

Table 6 shows that there has been a significant variation in engaging NGO activities across three geographical regions. Looking at the adjusted effects of geographical region, one can interpret that women in North-Western region (Khulna, Rajshahi and Barishal) had a higher chance of engaging in NGO activities compared with women in Dhaka Division (OR=1.212, 95% CI: 1.100-1.335, p<0.000). On the other hand, women from South-Eastern region (Chittagong and Sylhet) were found to have a 42.9 % lower chance (OR=0.571, p<0.000) of being involved in NGO activities. This can be partly explained by the fact that people of the South-Eastern region are comparatively better-off than people from the North-Western region.

Education emerged as an important variable, in which that lower education is associated with NGO activities. It can be seen from Table 6 that women with no education have a 1.319 times higher chance of engaging in NGO activities than those who have a higher level of education even when controlling for other variables (95% CI: 1.010-1.716). This emphasizes the fact that the vast majority of women engaged in NGO activities come from poor educational backgrounds. A similar finding also emerged for the education of partners.

Economists are always keen to understand the effects of wealth on social outcomes. Generally, this study indicates that poorer women are more likely to be active in NGO activities than richer women. For example, in an unadjusted model, the involvement in NGO activities of the poorest women is 2.486 times (with 95% CI: 2.182-2.832, p<0.000) higher than the richest group of women. On the other hand, for adjusted model the wealth index for poorest is found to be 1.706 (95% CI: 1.435-2.029). The result remains statistically important and consistent even after controlling for other variables. Thus, one can conclude that the lower the wealth index quintile the higher probability is found to be involved in NGO activities in Bangladesh.

Table 6 about here

Conclusion

This study has examined the economic activities of women in Bangladesh on the basis of the macro-level data on women's participation in the labour force, continuity of their employment and participation in NGO activities. A set of socioeconomic and demographic characteristics of women were selected, including the age of the women, their marital status, number of living children, place of residence, geographical region, education and wealth index in order to examine their effects on women's economic activities in Bangladesh. Firstly, we have tried to understand the types of women's occupations in Bangladesh; secondly, we have mapped women's continuity of employment and finally, identified the key determinants of women's involvement in NGO activities as well as economic activities in Bangladesh.

The study indicates that female labour force participation has been increasing gradually, however the rate is not encouraging when compared to male labour force participation in Bangladesh. A big gender gap still exists and, as this study reveals, a vast majority of women are still performing economic activities in farming, agriculture and poultry industries particularly in the homesteads. Women have a long tradition of involvement in this sector and may well prefer to keep engagement in it.

It has been revealed that relatively higher aged women, currently marital status, higher number of children, living semi-rural, come from North-Western region, almost no education, and belong to poor wealth index quintile are found to be associated more with NGO activities in Bangladesh. A recent study carried by Rahman and Wright (2013) confirmed that about half of the ASA borrowers are landless and two-fifth of ASA borrowers in Bangladesh have no formal education. This study has also confirmed that women come from a poor financial background, currently married and who have a higher number of children living in the household are more likely to engage in economic as well as NGO activities in Bangladesh. The study suggests that government should invest in women education and create more job opportunities particularly in North-Western region in order to contribute in country's economy.

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Endnotes:

1. As on 31 December 2010, 3652 Micro Financial Institutions around the world reported their total number of borrowers.
2. According to the World Bank people are living on less than $1.25 a day, are under the poverty.
3. Monga is a seasonal food insecurity in ecologically vulnerable and economically weak parts of north-western Bangladesh, primarily caused by an employment and income deficit before aman2 is harvested. It mainly affects those rural poor, who have an undiversified income that is directly or indirectly based on agriculture.

Table 1: Labour Force Participation Rates in Percent (Aged 15 years or more) by Age and Gender: Evidence from *Labour Force Survey* (LFS) in Bangladesh

Age (in years)	1999-2000		2002-2003		2005-2006		2010	
	Male	Female	Male	Female	Male	Female	Male	Female
15-19	55.9	23.4	58.9	38.2	62.9	13.8	48.4	29.4
20-24	74.0	26.3	84.9	26.7	80.4	29.0	75.9	41.0
25-29	91.3	27.1	97.7	27.5	95.3	33.7	98.2	44.7
30-34	95.7	26.5	99.7	27.5	98.7	34.9	97.3	46.6
35-39	98.2	25.7	99.8	28.1	98.8	34.8	98.3	47.7
40-44	97.8	26.6	99.7	25.6	97.7	35.2	98.1	46.2
45-49	97.6	23.4	99.5	22.6	97.8	32.6	97.4	47.6
50-54	95.8	18.3	99.2	19.9	95.4	31.1	94.1	10.3
55-59	93.5	18.4	97.3	17.2	92.7	27.7	88.5	11.2
60-65	81.4	11.1	87.8	13.4	82.7	22.6	77.2	6.6
65+	56.6	9.0	66.1	8.7	59.3	14.8	-	-
Total	84.0	23.9	87.4	26.1	85.8	29.2	82.5	36.0

Sources: The Bangladesh Labour Force Surveys, 2000, 2003, 2006 and 2010 (BBS, 2002, 2004, 2008, 2011)

Table 2: Description of variables used in the study and their summary analysis

Characteristics of respondents	Survey question ID	Measurement of variable	N	%
Occupation of women	V716	Non-employed	7147	65.0
		Professional	128	1.2
		Business	230	2.1
		Semi-skilled labour	1015	9.2
		Farmer/poultry worker	1933	17.6
		Unskilled labour	523	4.8
		Other	11	0.1
Continuity of employment (worked in last 12 months)	V731	Otherwise Employed all the year	7145	65.0
			3851	35.0
Age in years	V013	15-24	3599	32.7
		25-34	3590	32.7
		35-49	3807	34.6
Marital status	S105A	Divorced/separated/widowed	804	7.3
		Currently married	10192	92.7
Number of living children	V218	0	1212	11.0
		1-2	5144	46.8
		3+	4640	42.2
Type of place of residence	V025	Urban	2482	22.6
		Rural	8514	77.4
Geographical regions	V024	Barishal	662	6.0
		Chittagong	2023	18.4
		Dhaka	3431	31.2
		Khulna	1396	12.7
		Rajshahi	2776	25.2
		Sylhet	707	6.4
Educational attainment	V106	No education	3746	34.1
		Primary	3263	29.7
		Secondary	3341	30.4
		Higher	646	5.9
Partner's educational attainment	V701	No education	3915	35.6
		Primary	2888	26.3
		Secondary	2846	25.9
		Higher	1334	12.1
Wealth index	V190	Poorest	2115	19.2
		Poorer	2157	19.6
		Middle	2186	19.9
		Richer	2259	20.5
		Richest	2278	20.7
Involvement in NGO activities	S116A	Belongs to Grameen Bank (yes, no)	1470	13.4
	S116B	Belongs to BRAC (yes, no)	932	8.5
	S116C	Belongs to ASHA (yes, no)	1225	11.1
	S116D	Belongs to PROSHIKA (yes, no)	90	0.8
	S116E	Belongs to BRDB (yes, no)	127	1.2
	S116F	Belongs to Mothers Club (yes, no)	3	0.0
	S116G	Belongs to other organisation (yes, no)	1583	14.4

Note: Total study sample: 10,996 women aged 15-49 years.

Table 3: Percent distribution of women's participation in economic activities by selected variables

Variable	N	Non-employed	Professional	Business	Semi-skilled labour	Farmer/ poultry worker	Unskilled labour	Other
Age of women:								
15-24	3599	74.1	0.7	1.2	9.6	12.1	2.3	0.0
25-34	3590	59.5	1.7	1.7	10.3	20.9	5.9	0.1
35+	3807	61.8	1.1	3.3	7.8	19.8	6.0	0.2
Marital status:								
Divorced/separated/widowed	804	43.1	0.7	4.7	14.8	13.6	22.4	0.6
Currently married	10192	66.8	1.2	1.9	8.8	17.9	3.4	0.1
Number of living children:								
0	1212	73.3	1.8	0.8	11.1	8.6	4.2	0.2
1-2	5144	65.0	1.6	2.1	10.2	16.2	4.7	0.1
3+	4640	63.3	0.5	2.4	7.6	21.5	5.0	0.1
Type of place of residence:								
Urban	2482	67.6	2.1	2.5	14.5	5.4	7.7	0.1
Rural	8514	64.3	0.9	2.0	7.7	21.1	3.9	0.1
Geographical regions:								
Barishal	662	76.1	1.4	2.1	6.5	10.9	3.0	0.0
Chittagong	2023	76.2	0.9	1.1	10.0	8.0	3.7	0.1
Dhaka	3431	63.7	1.1	1.7	9.8	18.6	5.0	0.1
Khulna	1396	60.6	1.6	3.2	9.7	20.4	4.5	0.0
Rajshahi	2776	53.5	1.2	3.0	9.6	27.1	5.5	0.1
Sylhet	707	83.3	0.8	1.0	4.4	4.1	6.1	0.3
Education of respondent:								
No education	3746	56.1	0.1	3.0	8.0	22.8	9.6	0.3
Primary	3263	65.5	0.2	2.1	8.5	20.0	3.7	0.0
Secondary	3341	74.2	0.6	1.4	10.6	12.0	1.1	0.0
Higher	646	66.8	15.8	0.3	12.4	3.9	0.8	0.0
Partner's education:								
No education	3915	57.5	0.0	2.3	8.8	23.2	8.0	0.2
Primary	2888	66.3	0.1	2.6	8.5	17.9	4.4	0.1
Secondary	2846	70.1	0.7	2.0	10.4	14.1	2.6	0.0
Higher	1334	73.2	7.7	0.7	9.7	8.0	0.6	0.0
Wealth index:								
Poorest	2115	52.8	0.0	2.3	5.8	30.7	7.9	0.4
Poorer	2157	59.4	0.3	2.6	9.6	22.9	5.1	0.0
Middle	2186	67.6	0.4	1.7	8.3	17.7	4.4	0.0
Richer	2259	68.9	1.4	2.7	11.2	13.4	2.5	0.0
Richest	2278	75.6	3.6	1.2	11.1	4.6	4.0	0.0
Involvement in NGO:								
Yes	4109	55.9	0.8	3.6	11.7	22.6	5.3	0.0
No	6883	70.9	1.4	1.2	7.8	14.6	4.4	0.2

Table 4: Percent distribution of women employment as well as NGO activities in Bangladesh by selected variables

Variables	Employment status			NGO involvement		
	Employed	Non-employed	χ^2 *test*P value	Involved	Non-involved	χ^2 *test*P value
Age of women:						
15-24	26.0	74.0	0.000	30.6	69.4	0.000
25-34	40.6	59.4		41.6	58.4	
35+	38.3	61.7		39.9	60.1	
Marital status:						
Divorced/separated/widowed	57.0	43.0	0.000	29.2	70.8	0.000
Currently married	33.3	66.7		38.0	62.0	
Number of living children:						
0	26.7	73.3	0.000	18.6	81.4	0.000
1-2	35.2	64.8		36.8	63.2	
3+	37.0	63.0		43.0	57.0	
Type of place of residence:						
Urban	32.5	67.5	0.000	33.4	66.6	0.000
Rural	35.8	64.2		38.6	61.4	
Geographical regions:						
Barishal	24.0	76.0	0.000	42.3	57.7	0.000
Chittagong	24.0	76.0		27.7	72.3	
Dhaka	36.3	63.7		37.1	62.9	
Khulna	39.5	60.5		46.2	53.8	
Rajshahi	46.5	53.5		42.2	57.8	
Sylhet	16.8	83.2		25.6	74.4	
Education of respondent:						
No education	43.9	56.1	0.000	42.9	57.1	0.000
Primary	34.5	65.5		41.8	58.2	
Secondary	25.9	74.1		30.3	69.7	
Higher	33.2	66.8		19.7	80.3	
Partner's education:						
No education	42.6	57.4	0.000	43.8	56.2	0.000
Primary	33.7	66.3		41.2	58.8	
Secondary	29.9	70.1		32.2	67.8	
Higher	26.8	73.2		21.4	78.6	
Wealth index:						
Poorest	47.2	52.8	0.000	42.6	57.4	0.000
Poorer	40.7	59.3		43.8	56.2	
Middle	32.6	67.4		40.8	59.2	
Richer	31.2	68.8		37.6	62.4	
Richest	24.5	75.5		23.0	77.0	
Involvement in NGO:						
Yes	44.2	55.8	0.000			
No	29.6	70.4				

Note: Others are subsequently included under the non-employed category.

Table 5: Logistic regression analysis showing the extent of the effects (odds ratio) of variables on women's participation in employment in Bangladesh

	Unadjusted			Adjusted		
Variables	Odds ratio	95% CI	P value	Odds ratio	95% CI	P value
Age of women:						
15-24 (ref.)	1.000			1.000		
25-34	1.943	1.758-2.147	0.000	1.796	1.596-2.021	0.000
35+	1.768	1.601-1.952	0.000	1.577	1.379-1.805	0.000
Marital status:						
Divorced/separated/widowed (ref.)	1.000			1.000		
Currently married	0.376	0.325-0.435	0.000	0.383	0.327-0.449	0.000
Number of living children:						
0 (ref.)	1.000			1.000		
1-2	1.487	1.294-1.710	0.000	1.126	0.968-1.311	0.125
3+	1.614	1.402-1.857	0.000	0.949	0.799-1.128	0.555
Type of place of residence:						
Large city (ref.)	1.000			1.000		
Small City	1.064	0.847-1.336	0.595	0.792	0.616-1.018	0.069
Town (Municipality)	1.196	0.987-1.449	0.068	0.965	0.782-1.191	0.741
Rural (countryside)	1.236	1.089-1.401	0.001	0.747	0.635-0.879	0.000
Geographical regions:						
Khulna/Rahshahi/Barishal	1.237	1.130-1.354	0.000	1.160	1.052-1.280	0.003
Chittagong/Sylhet	0.498	0.444-0.558	0.000	0.516	0.457-0.583	0.000
Dhaka (ref.)	1.000			1.000		
Education of respondent:						
No education	1.575	1.321-1.879	0.000	0.729	0.569-0.934	0.012
Primary	1.060	0.886-1.268	0.523	0.610	0.477-0.768	0.000
Secondary	0.701	0.585-0.840	0.000	0.549	0.447-0.693	0.000
Higher (ref.)	1.000			1.000		
Partner's education:						
No education	2.030	1.771-2.328	0.000	1.318	1.083-1.603	0.006
Primary	1.386	1.201-1.601	0.000	1.150	0.950-1.393	0.152
Secondary	1.166	1.008-1.348	0.039	1.180	0.986-1.411	0.070
Higher (ref.)	1.000			1.000		
Wealth index:						
Poorest	2.771	2.437-3.150	0.000	2.578	2.157-3.081	0.000
Poorer	2.121	1.865-2.412	0.000	2.246	1.890-2.668	0.000
Middle	1.497	1.313-1.706	0.000	1.716	1.449-2.032	0.000
Richer	1.402	1.230-1.597	0.000	1.644	1.405-1.923	0.000
Richest (ref.)	1.000			1.000		
Involvement in NGO:						
No (ref.)	1.000			1.000		
Yes	1.884	1.739-2.042	0.000	1.621	1.487-1.768	0.000

Note: Odds ratio f or reference category (ref.) is 1.00

Table 6: Logistic regression analysis showing the extent of the effects (odds ratio) of variables on women's participation in NGO activities in Bangladesh

	Unadjusted			Adjusted		
Variables	Odds ratio	95% CI	P value	Odds ratio	95% CI	P value
Age of women:						
15-24 (ref.)	1.000			1.000		
25-34	1.617	1.467-1.782	0.000	1.344	1.198-1.508	0.000
35+	1.507	1.369-1.659	0.000	1.200	1.052-1.368	0.007
Marital status:						
Divorced/separated/widowed (ref.)	1.000			1.000		
Currently married	1.490	1.273-1.744	0.000	1.552	1.314-1.834	0.000
Number of living children:						
0 (ref.)	1.000			1.000		
1-2	2.545	2.179-2.973	0.000	2.223	1.891-2.614	0.000
3+	3.300	2.823-3.857	0.000	2.508	2.094-3.005	0.000
Type of place of residence:						
Large city (ref.)	1.000			1.000		
Small city	2.093	1.679-2.609	0.000	1.581	1.243-2.012	0.000
Town (Municipality)	1.493	1.230-1.812	0.000	1.275	1.034-1.573	0.023
Rural (Countryside)	1.638	1.439-1.864	0.000	0.943	0.802-1.109	0.476
Geographical regions:						
Khulna/Rahshahi/Barishal	1.302	1.190-1.424	0.000	1.212	1.100-1.335	0.000
Chittagong/Sylhet	0.632	0.567-0.705	0.000	0.571	0.509-0.641	0.000
Dhaka (ref.)	1.000			1.000		
Education of respondent:						
No education	3.079	2.509-3.778	0.000	1.319	1.010-1.716	0.042
Primary	2.934	2.388-3.607	0.000	1.405	1.088-1.813	0.009
Secondary	1.779	1.446-2.190	0.000	1.200	0.944-1.524	0.136
Higher (ref.)	1.000			1.000		
Partner's education:						
No education	2.860	2.473-3.307	0.000	1.889	1.557-2.291	0.000
Primary	2.568	2.209-2.984	0.000	1.832	1.518-2.211	0.000
Secondary	1.740	1.493-2.027	0.000	1.427	1.195-1.706	0.000
Higher (ref.)	1.000			1.000		
Wealth index:						
Poorest	2.486	2.182-2.832	0.000	1.706	1.435-2.029	0.000
Poorer	2.604	2.288-2.964	0.000	2.009	1.701-2.373	0.000
Middle	2.304	2.024-2.623	0.000	1.926	1.639-2.263	0.000
Richer	2.015	1.770-2.294	0.000	1.830	1.573-2.129	0.000
Richest (ref.)	1.000			1.000		

Note: Odds ratio f or reference category (ref.) is 1.00. Geographical region: Khulna/Rahshahi/Barishal are considered together as *North-western region*

Women's Participation in Economic and NGO Activities in Bangladesh

Abstract

This study examines key factors affecting the economic involvement of women in Bangladesh and women's involvement with Non-Governmental Organisations (NGOs) operating in that country. Quantitative analysis was utilised to explore data contained in the 2007 Bangladesh Demographic and Health Survey (BDHS). The findings indicate that age, marital status, number of children living in the household, place of residence, geographical location, education, partner's education and the wealth index are important factors in enabling women's involvement in economic activities. The key findings emerged from the study are firstly, the low level of women's economic activities in Bangladesh with a majority involved in farming, agriculture and poultry; secondly, those women involved in the labour market generally tended to come from poor backgrounds, have very little education, live in the North-West geographical region and have a large family living in the same house; and finally, age, currently married, having a higher number of children, living in semi-rural areas, from the North-West region with almost no education and belonging to the poor wealth index quintile are found to be associated more with NGO activities in Bangladesh. The findings indicate there are potential barriers that are preventing Bangladeshi women from engaging in the labour market that could reinforce the case for reshaping the Government's labour policies. It is generally understood that enhancing women's economic participation has a positive impact at family, community and country levels. It is anticipated that the findings will help policy-makers in enhancing female labour-force participation as well as encouraging them to engage in NGO activities in Bangladesh.

Key words: Women, female labour market participation, NGOs, logistic regression, poverty, economic activity, microcredit, Bangladesh.

Introduction

The economic contribution of women and their involvement with the third sector are subjects of interest in contemporary literature particularly in the social sciences (see for example, Amin et al., 1998; Kabeer, 2005; Pitt et al., 2006; Rahman and Khan, 2013; Bradshaw et al., 2013; Verick, 2014). Over the last two decades, micro-credit programmes have proved very popular in developing countries and have provided a focal point for discussions about the reduction of poverty across the world. Bangladesh is a developing country with a majority Muslim population and micro-credit programmes have been widely introduced there. It is often in discussion as to how Bangladesh has been so successful in utilizing its female population in economic activities where Islam as a religion is still play vital role in shaping people's life.

According to the 2012 Micro-Credit Summit[1] almost 205.30 million poor people around the world are involved in micro-credit activities; of these, 137.55 million first-time borrowers are the poorest[2] and over 82 per cent of them are women. It is also reported that women who are involved in micro-credit programmes become more confident and are able to lead a decent life along with their family members (see for example, Kabeer, 2005; Osmani, 2007; Kato and Kratzer, 2013; Rahman and Khan, 2013). Micro-credit enables poor families to tackle various shocks affecting their lives, including environmental problems such as flooding, because their family income has increased. Women's involvement in social

networks provided by NGOs can also offer support so enabling women to successfully get through such difficulties. A micro-credit programme therefore can help provoke a great transformation in a developing country, particularly for poor women living in rural areas.

In 2008, nearly 1.29 billion people across the world were living on less than $1.25 a day (World Bank, 2012). The poverty rate in Bangladesh reduced from 40 per cent in 2005 to 31.5 per cent in 2010 (BBS, 2010). NGOs and Micro Finance Institutions (MFIs) in Bangladesh are mainly targeting women in order to bring them into the micro-credit programmes and they provide various services such as education, maternal health and family planning, and training in income generating activities. According to the NGO Affairs Bureau Bangladesh (2011) there are over two thousand MFIs in the country all working with poor women to pull them out of poverty. According to BRAC Bangladesh (2011), about 2.32 million women in Bangladesh have received various types of services including asset, soft loan and financial support. BRAC Bangladesh has provided training in income generating activities (IGAs) to 1.33 million women, provided maternal services to poor women living in rural areas and also provided maternal, neo-natal and antenatal services to 5.7 million women living in urban areas in Bangladesh. The Grameen Bank (2011) claimed 8.35 million micro-credit borrowers in Bangladesh of which, 96 per cent were women and another large NGO, ASA Bangladesh (2011) claimed more than 5.01 million borrowers in Bangladesh of which 79 per cent were women.

As indicated, the vast majority of the beneficiaries of micro-credit loans are women for which there are several reasons. Epstein and Kim (2007) explained that foreign policy makers have increasingly focused on micro-credit programmes for women because they have recognised that not only is it a form of gender discrimination to leave women aside from such facilities but it is also an obstacle to economic and social development. Micro-credit programmes have brought women into the cash economy and are encouraging them to be trained in entrepreneurial skills that then help to stimulate economic growth. Some studies suggested that MFIs tend to lend money to women because they are more likely to repay the loans than are men and they are also more likely to spend their incomes on the welfare of their families. Women are playing substantial roles in sustaining micro-credit programmes because of their low drop-out and high recovery rates that are further encouraging the trend of targeting women (Khandker et al., 1995).

Economically Inactive versus Non-employed Women in Bangladesh

The Labour Force Survey (LFS, 2010) states that those people engaged in household work plus students and others including beggars, pensioners, income recipients and the disabled are economically inactive. Women who are engaged in such tasks such as child care, cooking food and taking care of elderly relatives are therefore considered to be economically inactive. Efroymson at el. (2006) revealed that women in Bangladesh work as much as 16 hours per day at various unpaid household tasks including activities such as farm work, helping in the family business and so on. However, due to the low level of education amongst women in Bangladesh, they are economically dependent on male relatives in three phases throughout their lifetime: first with their father, then a husband and then a son. According to LFS (2010), of the 38.9 million economically inactive people in Bangladesh, 30.6 million are women. Of the total inactive women, as many as 25.1 million (81.7 per cent) were engaged in household work followed by students at 2.2 million (10.3 per cent) with others at 3.3 million (8.0 per cent). Of the inactive 8.4 million males in the population, only 1.4 million (13.9 per cent) were engaged in household work, 4.6 million (54.6 per cent) were students and 2.6 million (31.5 per cent) were others.

The definition of "unemployment" is as recommended by the International Labour Organisation (ILO) based on the context of Bangladesh that is followed by the LFS. So a person aged 15 years and above is considered to be unemployed if s/he did not work at all, even for an hour in the reference week or during the preceding week of the survey but was actively looking for a job or, was available for work but did not due to illness or because there was no work available. LFS (2010) also states that people who work in a family business for less than 16 hours per week and do not get paid for that work then they are also unemployed. However, LFS (2010) argued that many of those considered as unemployed generally do perform some work in a family enterprise or other place and are not actually unemployed. The above definition of unemployment therefore may be problematic. If the survey was conducted during the lean season then the rate of unemployment would be higher. For example, in the north-west region of Bangladesh, a large number of people are unemployed mainly during two periods in a year: March-April and September-November. Since many women assist in a family business and in farming alongside their full time household work, they could be seen as either unemployed because they do not actively look for a job or seen as economically inactive. The term "non-employed" includes people like stay-at-home mothers and retired people who are not employed but may not be looking for work (i.e., out of the work-force at the time of survey). If a woman is found to be engaged in economic activities in Bangladesh then this is considered to show that they are "employed".

Participation Trends in the Female Labour Force

Bangladesh has a population of over 155 million with the majority living in rural areas. The economy of the country is predominantly dependent on the service sector, agriculture, garment exports, and some foreign remittances. According to the Bangladesh Bureau of Statistics (BBS, 2008), the number of women in the labour force increased from 5.4 million in 1995-96 to 12.1 million in 2005-06. In the same time periods, the number of men in the labour force increased from 30.6 million to 37.3 million. There were 23 million people of working age in the population (15 years of age and over) in urban areas and 72 million in rural areas (Khuda, 2014). It appears that the participation of women in the labour force in Bangladesh is very low, standing at just one-third of the participation of men (Hossain et al., 2004; Khuda, 2014). However, although there is no noticeable change in the rate of male participation within the period 1999-2010, Labour Force Survey (LFS) statistics show that at the country level there is an increasing trend for female participation in Bangladesh. This trend was seen to be declining in India from 2010-2012 (Verick, 2014).

Table 1 shows the labour force participation of those aged 15 years or more by age and gender. The distribution indicates that there is still a huge gap in economic activity rates between men and women as well as across various age cohorts. Overall, men appear to be dominating the labour force in Bangladesh. For instance, the participation of men in the 60 years or above age group is higher compared to their female counterparts. Participation of older women in 2005/06 seems to be exceptionally higher than expected and this requires further investigation. On the other hand, the participation rate of women noticeably increases for the age cohort 20-49. This could be explained by the revolutionary increase in the numbers of girls enrolling in school that started two decades ago. Moreover, increasing job opportunities for girls in various sectors including NGOs and garments seemed to play important role. All these have had tremendous impacts in recent years by increasing the participation of women in the labour force.

Table 1 about here

Nature of Women's Economic Activities in Bangladesh

The majority of women in Bangladesh have tended to engage in home management activities while men have usually tended to work outside the home such as in agriculture, trading, marketing and so on. The absence of women's participation indicated in official agricultural statistics is primarily due to deeply embedded social and cultural norms of patriarchy (a set of social relations with a material base that enables men to dominate women) and *purdah* that proscribes the seclusion of women including severe restrictions on their movement outside of their homes (see for example, Paris et al. 2004; Asadullah and Wahhaj, 2012). The International Rice Research Institute (IRRI) conducted Focus Group Discussions (FGD) among men and women separately covering 62 villages in 57 Districts in Bangladesh. This nationwide survey was initially conducted in 1987 and then again in 2000 to gain an understanding and provide information about women's economic activities. In this study, the IRRI found that cooking food for family members is a major responsibility of women as is preserving rice seeds while also being heavily involved in household maintenance, reproductive activities, taking care of elderly relatives, nursing family members when they get sick and tutoring children. Women have been performing economic activities such as raising cattle and poultry, in vegetable production, gardening, post-harvest, agro-forestry and importantly, income increasing, or expenditure saving activities (Kabeer, 2001). There are also seasonal variations of women's economic activities in rural areas in Bangladesh (Paris et al., 2004). For example, during the peak seasons of rice production (usually running from July to December) men are busy with harvesting and women with post-harvesting activities such as drying-up rice. There are two seasons during the year for rice production that take about six months each with a special type of production during the winter season (November-March) called *Boro* in Bengali that takes place in some parts of Bangladesh. So women living in those parts of the country are usually busy with post-harvesting activities in the winter season as well. For instance, women will sew clothes, make indigenous mats and quilts and different types of baskets as well as foodstuffs and then sell them either at the local market or to their neighbours during the off-peak seasons. Moreover, they can be raising cattle and poultry and selling milk and eggs in order to help meet the needs of their families as well as constructing mud stoves for boiling large volumes of rice.

According to Bhatt (1989), women who have engaged in these activities have been labelled as 'marginalised', 'informal, 'unrecognised, 'peripheral', and 'black economy workers' implying that they are inferior and insignificant while in actual fact, they are making a major contribution to the central economy. Bhatt suggested that it would be better to refer to these women workers as 'self-employed' to enhance their status. So in actuality women have been actively engaged in economic activities throughout the year that help boost the family income. It is unfortunate that their contribution remains invisible in the economy. The Bangladesh Home Workers Women's Association (BHWA) revealed that the estimated annual contribution of home-based workers to GDP is about TK.150 billion (Islam, 2006). Some studies have pointed out that men do not even appreciate women's household work in Bangladesh or their economic activities (Mehra, 1997; Sen, 1997; Bhatt, 1989; Efroymson et al., 2006; Sadaquat and Sheikh, 2011). In the 1961 Census, women's household work was defined as "productive economic activity" but in the 1974 Census (the First Census after independence in 1971) women's household work was defined as "housewife" (Waring, 1998). This shows that Bangladeshi women did not change their activities after the country became independent but rather the perception and categorisation of their activities had changed.

In the 1980s, there were a plethora of studies on women's involvement in home production activities in Bangladesh (for example, Halim and McCarthy, 1985; Hossain et al.,

1988) and the role of women's economic activities on development and poverty reduction continues to be an important area of investigation (see for example, McCarthy and Feldman, 1988; Rothschild and Mahmud, 1989; Jahan, 1990; Amin and Pebley, 1994; Hashemi et al., 1996). Shah (1986) conducted a study to investigate the role of women's economic activities between 1951 and 1981 in Pakistan. This study found that the socio-economic status of the households such as ownership of assets, husband's education and observance of *Purdah* are having an impact on the ability of women to participate in economic activities in Pakistan and Bangladesh (Kabeer, 2001).

The majority of the NGOs in developing countries concentrate on poor people and small-scale entrepreneurs to stimulate the development process. For example, most of the Self-Employed Women's Association (SEWA) in India and BRAC and the Grameen Bank in Bangladesh (Sen, 1997), focused particularly on improving women's economic status as well as changing perceptions of men towards women. As a result, the government and development agencies or donors including DFID, World Food Programme, UNICEF and Work Bank began to rely on NGOs in developing countries to accelerate the growth of the development process. Mehra (1997) revealed that women's capabilities, as part of building human capital, have been increased through improvements in access to education and a better health care service. However, there has been a much slower progress in terms of women's choices in accessing economic opportunities. Mehra (1997) is also concerned that globally only one-third of women are economically active whereas about half of women in East Asia and the Sub-Saharan are economically active. Azid et al. (2001) found that women's participation in the labour force or involvement in economic activities depended significantly on the number of children, age, education, poverty status, women's wage rate and predicted male wage rate (Sultana et al. 1994; Aly and Quisi, 1996). It is, however, recognised that women work more hours than men particularly in low-income households, more hours in agricultural than in non-agricultural economic activities, and more hours as unpaid family labourers than as managers. Even if they do most of the work, men mostly control decision-making and have ownership of household resources. As we have seen, since women do not have access to or control over household resources such as land and other consumer durables, they are further disadvantaged because of traditional cultural and social norms that confer power and privilege on men (Paris et al., 2004). Men target institutional services for career development and even when women are targeted, such as in micro-credit programmes, they are often used as a front and men keep control over managing the resources. Thus, it is acknowledged that women are disadvantaged by not being able to acquire knowledge about farm and non-farm production systems and technologies from the service sectors (Kabeer, 2001).

Women's contributions to household income and wellbeing through various economic activities have been on-going for a considerable time but, as indicated earlier, their contribution to the economy has largely been ignored (Elora, 2004; Bradshaw et al., 2013). Paris et al. (2004) said that since women's activities are not to be recognised outside those they perform within their immediate families then they will not be seen as being involved in field agricultural activities nor allowed to go to public places such as the market. In this way, the contributions of women to the economy and even their existence remain invisible to researchers but many women from poor households are getting involved in micro-credit programmes and attaining co-breadwinner status within the family through helping their male counterparts with post-harvest agricultural activities (Karim and Law, 2013). Torri and Martinez (2011) conducted research on a woman's community-based enterprise known as the Gram Mooligai Company Limited (GMCL) in Tamil Nadu, India that is promoted by the local NGOs in the Tamil Nadu State. They assessed the impact that GMCL was having on the capacity building of women and local development and showed that it is playing an important

economic role by increasing the managing, marketing and entrepreneurial skills of women as well as enhancing their productive capacity. They also discovered that the work of GMCL was helping change perceptions towards women in India.

The ready-made garments (RMG) sector has emerged as the biggest earner of country's foreign currency and the sector contributes significantly to the GDP in Bangladesh. Since the 1980s there has been a rapid growth in the garment industry and it provides employment to around 4.2 million Bangladeshis, mainly women from low income families. Women account for about two-thirds of the total employment in the garment industry and it has played an important part in changing the employment scenario for women with little or no education (Rahman and Islam, 2013). It is worthwhile to mention that although the gender pay gap has been reduced significantly in many industries in Bangladesh, in general, women still tend to be paid less than men (Hossain and Tisdell, 2005). Employees union in garments sector seemed to have been less active in raising their voice regarding pay discrimination, on the other hand, garment owners associations are well organised in protecting their interests.

In this study, we define economic activities as those that are either generating income for the household or are saving household expenditure for the acquisition of goods from the market. This includes employment in the agricultural and non-agricultural labour market, but also unpaid work in crop cultivation, homestead gardening, livestock and poultry raising, fishing, cottage industry, transport operation, construction, business, and personal services. It excludes unpaid activities such as domestic activities. There are many other activities mostly performed by women that are quasi-economic but are not valued in national income accounting. For example, food-processing and preparation of meals for family members, taking care of children as well as the elderly and sick members of the household and tutoring of children. If households had to hire workers to perform these jobs then it would involve expenditure (Efroymson at el. (2006).

Research Methodology

The Data

The data for this study was extracted from the Bangladesh Demographic and Health Survey (BDHS) 2007, a nationally representative cross-sectional survey that is widely used by research communities. The detailed methodology of the survey including the data collection method and quality of the data was explained in the national report of the survey (BDHS, 2007). In short, the survey covers the population residing in private dwelling units in Bangladesh and was based on the sampling frame of the 2001 population census. The sample was selected using a two-stage stratified technique, where 361 primary sampling units (PSUs) were selected in the first stage (227 from rural areas and 134 from urban PSUs). All households in the selected PSUs were recorded from January to March 2007. The resulting list of households was used as the sampling frame for selection of households in the second stage. On average, 30 households were selected from each PSU using an equal probability sampling technique. About 10,819 households were selected for the survey where 10,461 were occupied. Interviews were successfully completed in 10,400 households (99.4% of total households). A total of 11,178 eligible women aged 15-49 were identified in the selected households and 10,996 (6,845 from rural and 4,151 from urban) were interviewed for the women's questionnaire (the response rate is 98.4 per cent). The 10,996 women sample is used for the analysis in the paper. BDHS is a nationally representative household survey that has been conducted in the country since 1993 at regular intervals, preferably once every two years, in order to generate vital statistics and population health indicators in Bangladesh. For

many low and middle income countries this DHS survey is the only reliable source of information that can be used to carry out comparative studies across the world.

Tools of data collection and processing

The BDHS used the MEASURE DHS+ model questionnaires and were pre-tested before data collection. Information was collected about socio-economic and demographic characteristics, health and lifestyle factors, marriage and family planning, health care facilities, HIV/AIDS, sexually transmitted diseases (STD), and domestic violence. To ensure the quality of data, qualified personnel from Mitra and Associates, along with officials from the National Institute of Population Research and Training (NIPORT) were employed. Data processing was carried out between 16 April and 31 August 2007 using CSPro including editing, coding of open-ended questions, data entry, and editing inconsistencies observed in the computer programme and each stage of the survey was carefully monitored by USAID, NIPORT, Mitra and Associates, Ministry of Health, and Macro International USA (BDHS, 2007).

Variables used for statistical analysis

Variables were carefully selected from the earlier studies to examine their effects on economic as well as NGO activities in Bangladesh. The description of variables and their measures along with the BDHS survey variable codes are presented in Table 2. The variable code helps the reader to view and check each question if wished. Variables are further classified according to their causality and the use of statistical models and are described as follows:

Dependent variables

Women's occupations are considered to examine the pattern of their economic engagement by their socioeconomic and demographic backgrounds. There is a long list of occupational categories in the BDHS survey which are reduced to a small number of categories as follows: i) non-employed, ii) professional, iii) business (small and large business), iv) semi-skilled labour (home based manufacturing; factory worker, blue collar services; semi-skilled labourer), v)farmer/poultry worker (land owner; farmer; agriculture worker; fisherman; poultry and cattle raising), vi) unskilled labour (rickshaw driver, brick breaking, road building construction work; domestic servant), vii) others (student; retired; other). Then two dichotomous dependent variables were considered to study women's participation in economic activities: i) women's participation in employment for the last 12 months (either employed or non-employed); and ii) women's involvement in NGOs activities as being actively involved or not involved at all.

Independent variables

From the large set of variables we selected those we felt to be relevant namely, age of the women, marital status, number of living children, urbanisation, geographical regions, educational status of respondents and their partners, asset quintiles and involvement in NGOs. Definition and measurement of the variables are illustrated in Table 2. The variables were selected based on existing literature and theories (Becker, 1961; Hossain et al., 2004) on women's participation in economic activities.

Statistical tools used for analysis

Firstly, we performed a univariate analysis and presented descriptive information about the study sample along with women's participation in employment activities by selected variables. Secondly, the bivariate association of the two outcome variables (women's participation in employment and women's participation in NGO activities) with each of the selected independent variables (including p-values of the test statistics for testing the null hypothesis of no association) was reported based on the Chi-square test (Chan, 2003). Finally, we performed a univariate as well as a multivariable binary logistic regression analysis for both dichotomous dependent variables. Univariate analysis provides the direct effect of a variable without controlling for any covariates and we call it the *unadjusted effect*. On the other hand, the *adjusted effect* of a variable is calculated when all remaining variables are controlled for. We reported the odds ratio (OR) and the 95% confidence interval (CI) for adjusted and unadjusted cases to show summary statistics of the univariate as well as multivariable models. The effect measures the likelihood of involvement in economic activity and the strength of the effect is captured by the odds ratios (each group is compared with the reference group). The reference groups are carefully selected in the paper and are consistent with the past research studies and reliable in terms of sample size.

In brief, for a logistic regression model, women's participation in employment was dichotomized as "yes = 1, if participated in any employment in the last 12 months of the survey" and "no = 0, if no participation in employment". Likewise, 1 is coded if a respondent belongs to an NGO, otherwise 0 is coded and thus we can also construct an appropriate logistic regression model for women's participation in NGO activities.

For general understanding, the dependent variable y being a binary variable that equals '1' if the respondent has any employment, and '0' for otherwise. Thus the following logistic regression model is fitted:

$$\text{logit}\ (p) = b_0 + b_1 x_1 + b_2 x_2 + \ldots + b_k x_k$$

Where logit (p) = log (p/1-p) and p is the probability of being occurring y = 1. b_i (i=1, 2,...,k) are the linear regression coefficients indicating the effects of the independent variables and b_o is the intercept. A detailed explanation of the model can be found elsewhere (Khan and Raeside, 1997; Hosmer and Lemeshow, 2001; Chan, 2004).

Results and Discussions

Descriptive analysis

Table 2 shows the summary statistics of the characteristics of the respondents used in the paper. This study found that a vast majority of women (about 65%) are non-employed in the survey. However, 17.6% are engaged in farming and poultry-related works. More than 9% of women are employed in the semi-skilled labour sector, nearly 5% of them in unskilled labour or doing other types of jobs. Therefore, in the survey, about 35% of women are found to be employed for the last 12 months. The proportion of respondents is equally distributed across the age cohorts 15-24, 25-34 and 45-49 years. The vast majority of women (93%) are currently married. About 11% of respondents reported that they have no children in their family with a majority having at least one child in the household. Nearly 77% of respondents live in rural areas and the rest (23%) living in urban areas. In terms of geographical locations, a majority (31%) of respondents surveyed came from the Dhaka Division followed by 25%

from Rajshahi Division, and 18% from Chittagong Division. The lowest proportion (6%) came from Barishal and Sylhet Divisions. In the survey, the highest proportion of women (34%) did not have any formal education and a small percentage (about 6%) had college and university level education. A similar trend is also observed in terms of a partner's education and women are more or less equally distributed across the wealth index. Social activity (predominantly NGO economic activities) is becoming popular and socially acceptable in Bangladesh. As mentioned earlier, both NGOs and MFIs are providing micro-credit to poor people in order to improve the borrower's socio-economic status (Rahman, 2010; Farazi, 2011). Lastly, it was found that about 14% of women belong to 'another organisation', followed by the Grameen Bank (13.4%) and ASA (11.1 %).

Table 2 about here

Table 3 describes women's economic status and occupations by selected characteristics. By and large, most women were found to have no job at the time of the survey (higher for those aged below 24 years) and about 63 per cent were found to have no involvement in NGO activities. A small proportion of women were engaged in professional jobs, but the proportion is observed to be higher among those who were over 25 years old, married, had no children, lived in urban areas and had the highest education along with a partner's highest level of education, and also were the richest and less involved in social activities. Women who were involved in business were relatively more active in NGO activities, had no formal education, lived in the northern part of the country, were more likely to be divorced, separated, or widowed, aged over 35, and to have three or more children living in the household. Farming, agriculture and poultry were the important sectors where women were contributing significantly. Women who belonged to this group were comparatively older in age, presently married, with three or more children in the household, living in a rural area, coming from the northern part of the country, no formal education, no partner education, poorest of the poor and involved in NGO activities. The results help to in understanding women's socioeconomic and demographic situations and how they are related to various employment activities in Bangladesh.

Table 3 about here

We observed that various factors are associated with different types of employment activities in Bangladesh although some categories only had small samples. It is, therefore, worthwhile to examine how these factors are associated with women's economic activities over the past 12 months.

It is shown in Table 4 that age, marital status, number of living children, types of residence, geographical regions, education of respondent as well as partner's education, wealth index and involvement in NGOs are strongly related to engagement in work activity in Bangladesh. The χ^2 test with its *p-value* (zero or close to zero) shows the statistical significance. Table 4 also demonstrates the frequency distribution of women actively engaged in the workforce, for example, more women in the age group 25-49 are involved in work than those in the 15-24 age group. Similarly, women with no education, no partner education, the poorest group of the society and those involved with NGOs were found to be more economically active.

Table 4 about here

Likewise, Chi-squared tests are performed for the selected variables to examine whether any association existed between the variable NGO activities. As we have shown, almost all NGO activities are related to micro-credit programmes. It can be seen from Table 4 that age, marital status, number of children, type of place of residence, geographical regions, education of women and their partners, and the wealth index are found to be strongly associated with NGO activities. Women aged over 25 years are more likely to have an involvement in NGO activities compared to their younger counterparts. The higher the number of children in the household, the greater the chance of the head of the household particularly, a woman being involved in NGO activities. A higher proportion of women involved in NGOs are in a rural location than an urban location. The highest proportion of women involved in NGO activities had no formal education with a similar pattern observed for a partner's education. Table 4 also shows that women from the poorer wealth cohort are likely to be more involved in NGO activities than their richer counterparts.

From the Pivotal analysis it is difficult to confirm the effects that independent variables and their categories have and so we applied advanced statistical techniques to tease out the effects of the variables in this study. The results are illustrated in Tables 5 and 6.

Logistic Regression Analysis

The results of the logistic regression analysis for women's participation in economic activities are presented in Table 5. Both univariate as well as multivariate logistic regression models were constructed to evaluate the effects of predictors for unadjusted and adjusted effects. Unadjusted effects of a variable may or may not be determinants of the outcome variable in the presence of other predictors. However, the adjusted effects of a predictor variable are obtained through multivariate analysis by controlling for other variables. Both effects are discussed simultaneously in this section. This study found that women aged over 25 years are more likely to be engaged in employment activity compared to the younger age cohort. The effect is found to be 1.796 times higher with 95% CI (1.595-2.021) for the age cohort 25-34 and 1.577 times higher with 95% CI (1.379-1.805) than the reference group 15-24 age cohort. Currently, married women are less likely to have engaged in work even after controlling for other variables and are found to be 61.7% lower than divorced/separated/widowed group (OR=0.383, 95% CI: 0.327-0.449).

The number of children living in a household had strong positive effects on economic involvement. This study found that the higher the number of children living in the household then the higher the chance of a woman participating in economic activities. In Table 5, those who had 3 or more children had a 1.614 times (95% CI: 1.402-1.857) higher chance of involvement in economic activities than those who had no children. Similarly, women who had one (1) or two (2) children had a higher probability of being involved (Odds Ratio =1.487, 95% CI: 1.294-1.710 with $p<0.000$). However, the predictor becomes statistically insignificant when controlling for other variables in a multivariate model. This means that other factors may be more important than the number of children when modeling economic activities in Bangladesh.

The place of residence is found to have a statistically significant effect on women's economic activities, for example, rural women are found to be 1.236 times more likely to engage in economic activities than those in urban areas (95% CI: 1.089-1.401, $p<0.001$). An opposite finding was observed in multivariate model (OR=0.747, $p<0.001$). It meant that when all other variables are considered in the model, rural women are found to have a 25.3% lower likelihood to be employed as compared to women from a large city such as Dhaka. This may be explained by the fact that urbanization is closely associated with other covariates in the model. Geographical region is considered as a predictor to estimate the effects of

regional influences on continuing in economic activities. There are regional disparities in terms of income and job opportunities, for example, the North-Western region suffers from lack of job opportunities and low average income compared to the rest of the country. And because of that the Government has special programmes in those areas to support poor families tackling Monga[3] (seasonal food insecurity) in rural Bangladesh. The lean season reduces peoples' access to income which is a shock to their livelihoods and fuels chronic poverty (Zug, 2006). This study revealed that women from the North West part of Bangladesh (Khulna, Rajshahi and Barishal) have a higher chance (16.0%) of being involved in the workforce compared to women in the Dhaka Division (OR=1.160, 95% CI: 1.052-1.280). In contrast, women from the South East part of Bangladesh (Chittagong/Sylhet regions) have a 48.4% lower chance of being involved compared to the Dhaka regions (OR=0.516, 95% CI: 0.457-0.583). The North-West region is poor compared to the rest of the country and women have to seriously look for a job in order to survive. On the other hand, it is widely known that women living in the South East of the country are restricted to their houses and are less likely to receive permission for working outside their homes by the head of the household who are usually men. Dhaka is often used as a reference category for comparative purposes as it is situated in the central part of the country and we believe it can provide a fair judgement on the likelihood of changes in circumstances in other areas. The results are consistent with existing literature.

Women's education is found to have an important predictor role in their engagement in economic activities. Generally speaking, lower education is associated with a less likelihood of being engaged in economic activities. The results of the univariate model show that women with secondary education had a 29.9% lower chance of engaging in economic activity compared to those women who possessed a higher level of education. This is also found to be consistent while controlling for other remaining variables in the model and means that women with secondary education are found to have a 45.1% lower chance for continuing in economic activity compared to women who possess a higher level of education. The results are expected because women's education plays an important role in their economic participation. On the other hand, a husband's education appeared to be an insignificant factor that means it has no significant association with women's participation in economic activities.

The wealth index is a good predictor for capturing the probability of involvement in economic activities. As it can be seen from Table 5, relatively poor women are more likely to be involved in economic activities than the richest counterparts. It is observed that the magnitude of the odds ratio is consistently changing with respect to various categories of the wealth index. For example, those who belong to the poorest, poorer wealth and middle wealth categories are found to have 2.578, 2.246 and 1.716 times higher chances respectively of being engaged in economic activities than the richest wealth group.

Women's involvement in NGO activities is used to examine whether it has any association with women's economic activities or not. It was found that women who are involved in NGO activities have an 88.4% higher chance (95% CI: 1.739-2.042) of continuing employment than those who were not involved at all. This unadjusted effect was the sole direct effect of women's NGO participation on continuing employment. Similar findings emerged when controlling for all remaining covariates (OR = 1.621, 95% CI: 1.487-1.768, $p<0.000$). It is stressed that NGO activities encourage women to continue their employment. Micro-credit programmes have been running successfully in Bangladesh and a major proportion of women are involved in at least one NGO activity. The NGO sectors employ a huge number of women and therefore it is worthwhile to investigate what factors are affecting NGO activities in Bangladesh.

Table 5 about here

Because a variable such as "women's involvement in NGO activities" is a dichotomous variable we also fit a logistic regression model both for univariate as well as multivariate purposes and the results are shown in Table 6. The findings revealed that the higher the age of women, the greater the likelihood of them being involved in NGO activities. Marital status was found to have a statistically significant effect on involvement in NGO activities. For example, the adjusted effect showed that currently married women have a 55.2% higher probability of involvement in NGOs than any other group (OR=1.552, 95% CI: 1.314-1.834).

Women's participation in NGO activities may bring numerous benefits to a country's economy such as fertility and a decline in mortality as well as raising health awareness and education. This study found that women with a higher number of children are more likely to be involved in NGO activities in Bangladesh. Both adjusted and unadjusted effects revealed that there are some consistent findings to support the statement that women generate money to feed and support the family and the support is even higher for those families that have a higher number of children (Table 6).

Urbanization has dominated some social science research because of its power to explain socio-cultural changes. In this study, we have considered it in order to examine how it may have influenced women to get involved in NGO activities. Such activities are more likely to be concentrated in the relatively developed region (urbanized) where better transport facilities and government and private facilities are available (Sharma and Zeller, 1999). Therefore, people who live in an urban area or proximity to an urban area are more likely to be participating in NGO activities. However, many NGOs or MFIs such as Grameen Bank, BRAC and ASA are working across the country to bring poor women into the traditional financial system. It is worth mentioning here that according to the Micro-credit Regulatory Authority (MRA), there are about 34 million clients who are actively involved in NGO activities and most of them are women from rural areas (MRA, 2011). Thus it could be argued that women who live in rural areas have the opportunity to get involved in NGO activities because of the abundance of micro-credit programmes.

Table 6 shows a significant variation in engagement with NGO activities across three geographical regions. Looking at the adjusted effects of geographical region, it could be interpreted that women in the North West region (Khulna, Rajshahi and Barishal) have a higher chance of engaging in NGO activities compared with women in the Dhaka Division (OR=1.212, 95% CI: 1.100-1.335, $p<0.000$). On the other hand, women from the South East region (Chittagong and Sylhet) are found to have a 42.9 % lower chance (OR=0.571, $p<0.000$) of being involved in NGO activities. This can be partly explained by the fact that people in the South East region are comparatively better off than people in the North West region.

With regards to the level of education of the respondents, a lower level of education is associated with NGO activities. It can be seen from Table 6 that women with no education have a 1.319 times higher chance of engaging in NGO activities than those who have a higher level of education even when controlling for other variables (95% CI: 1.010-1.716). This emphasises the fact that the vast majority of women engaged in NGO activities come from poor educational backgrounds. A similar finding also emerged for the level of education of their partners.

Economists are always keen to understand the effects of wealth on social outcomes. Generally, this study indicates that poorer women are more likely to be active in NGO activities than richer women. For example, in an unadjusted model, the involvement in NGO activities of the poorest women is 2.486 times (with 95% CI: 2.182-2.832, $p<0.000$) higher

than the richest group of women. On the other hand, for an adjusted model the wealth index for the poorest is found to be 1.706 (95% CI: 1.435-2.029). The result remains statistically important and consistent even after controlling for the other variables. Thus it can be concluded that the lower the wealth index quintile the higher the probability for involvement in NGO activities in Bangladesh.

Table 6 about here

Conclusions

This study examined the economic activities of women in Bangladesh on the basis of the macro-level data on women's participation in the labour force, continuity of their employment and participation in NGO activities. A set of socioeconomic and demographic characteristics of women was used including the age of the women, their marital status, number of living children, place of residence, geographical region, education and wealth index in order to examine the effects on women's economic activities in Bangladesh. Firstly, we attempted to understand the types of women's occupations in Bangladesh; secondly, we mapped women's continuity of employment, and finally, identified the key determinants of women's involvement in NGO activities as well as economic activities in Bangladesh. This study indicates that female labour force participation has been gradually increasing in Bangladesh but the rate is not an encouraging one when compared to participation of males counterparts. This indicates that a big gender gap still exists in labour market participation. Moreover, variation in economic participation is also found to be significant for age cohorts. It is suggested that policy-makers should take the finding seriously in order to balance equal participation by age and sex in labour market. The study has revealed that among those employed a vast majority of women are performing economic activities in farming, agriculture and poultry industries particularly in the homesteads. Women in Bangladesh have a long tradition of involvement in this sector and may well prefer to keep engaging in it because of socio-cultural norms. It is likely to be continued unless other sectors are developed in Bangladesh particularly in rural setting. In such a case, micro-credit may play an important role in income generation, alleviating poverty through entrepreneurship and more importantly encouraging people to involve in various types of economic activities (Rahman and Khan, 2013).

The findings indicate that age, marital status, number of children living in the household, place of residence, geographical location, education, partner's education and the wealth index are important factors in enabling women's involvement in labour market. In other words, those women involved in the labour market generally tended to come from poor backgrounds, have very little education, live in the North-West geographical region and have a large family living in the same house. The empirical findings confirm the theoretical linkages as to how socio-economic and demographic factors are associated with labour-force participation. In other words, it tells us why women are engaged in economic activities and how the government of the country can benefit out of the key findings of research. The results can be used for policy-making purposes at national as well as local authority level.

Relatively higher aged women, currently married (persons living in consensual unions or in visiting partnerships), having a higher number of children, living in semi-rural areas, from the North-West region with almost no education and belonging to the poor wealth index quintile are found to be associated more with NGO activities in Bangladesh. A recent study carried out by Rahman and Wright (2013) confirmed that about half of the ASA borrowers are landless and two-fifths of ASA borrowers in Bangladesh have no formal education. The present study has also confirmed that women who come from a poor financial background,

currently married and who have a higher number of children living in the household are more likely to engage in economic as well as NGO activities in Bangladesh. It however suggests that the Bangladesh Government should invest in women's education and create more job opportunities for women particularly in the North-West region in order to enhance the country's economy.

Our findings clearly indicate there are potential barriers that are preventing Bangladeshi women from engaging in the labour market that could reinforce the case for reshaping the Government's labour policies. The study shows that education has a positive impact on labour market participation and then increasing educational opportunities can reduce the risk of labour market enrolment. It is generally understood that enhancing women's economic participation has a positive impact at family, community and country levels.

Although the study has carefully selected important variables for multivariate data analysis and assumes that there is no statistically correlation between selected independent variables, however, it appears to be a limitation in the study and thus future study should look at this issue by analysing correlation matrix for model building purposes.

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Endnotes:

1. As on 31 December 2010, 3652 Micro Financial Institutions around the world reported their total number of borrowers.

2. According to the World Bank people are living on less than $1.25 a day, are under the poverty.

3. Monga is a seasonal food insecurity in ecologically vulnerable and economically weak parts of north-western Bangladesh, primarily caused by an employment and income deficit before aman2 is harvested. It mainly affects those rural poor, who have an undiversified income that is directly or indirectly based on agriculture.

Table 1: Labour Force Participation Rates in Percent (Aged 15 years or more) by Age and Gender: Evidence from *Labour Force Survey* (LFS) in Bangladesh

Age (in years)	1999-2000		2002-2003		2005-2006		2010	
	Male	Female	Male	Female	Male	Female	Male	Female
15-19	55.9	23.4	58.9	38.2	62.9	13.8	48.4	29.4
20-24	74.0	26.3	84.9	26.7	80.4	29.0	75.9	41.0
25-29	91.3	27.1	97.7	27.5	95.3	33.7	98.2	44.7
30-34	95.7	26.5	99.7	27.5	98.7	34.9	97.3	46.6
35-39	98.2	25.7	99.8	28.1	98.8	34.8	98.3	47.7
40-44	97.8	26.6	99.7	25.6	97.7	35.2	98.1	46.2
45-49	97.6	23.4	99.5	22.6	97.8	32.6	97.4	47.6
50-54	95.8	18.3	99.2	19.9	95.4	31.1	94.1	10.3
55-59	93.5	18.4	97.3	17.2	92.7	27.7	88.5	11.2
60-65	81.4	11.1	87.8	13.4	82.7	22.6	77.2	6.6
65+	56.6	9.0	66.1	8.7	59.3	14.8	-	-
Total	84.0	23.9	87.4	26.1	85.8	29.2	82.5	36.0

Sources: The Bangladesh Labour Force Surveys, 2000, 2003, 2006 and 2010 (BBS, 2002, 2004, 2008, 2011)

Table 2: Description of variables used in the study and their summary analysis (BDHS, 2007)

Characteristics of respondents	Survey question ID	Measurement of variable	N	%
Occupation of women	V716	Non-employed	7147	65.0
		Professional	128	1.2
		Business	230	2.1
		Semi-skilled labour	1015	9.2
		Farmer/poultry worker	1933	17.6
		Unskilled labour	523	4.8
		Other	11	0.1
Continuity of employment (worked in last 12 months)	V731	Otherwise Employed all the year	7145	65.0
			3851	35.0
Age in years	V013	15-24	3599	32.7
		25-34	3590	32.7
		35-49	3807	34.6
Marital status	S105A	Divorced/separated/widowed	804	7.3
		Currently married	10192	92.7
Number of living children	V218	0	1212	11.0
		1-2	5144	46.8
		3+	4640	42.2
Type of place of residence	V025	Urban	2482	22.6
		Rural	8514	77.4
Geographical regions	V024	Barishal	662	6.0
		Chittagong	2023	18.4
		Dhaka	3431	31.2
		Khulna	1396	12.7
		Rajshahi	2776	25.2
		Sylhet	707	6.4
Educational attainment	V106	No education	3746	34.1
		Primary	3263	29.7
		Secondary	3341	30.4
		Higher	646	5.9
Partner's educational attainment	V701	No education	3915	35.6
		Primary	2888	26.3
		Secondary	2846	25.9
		Higher	1334	12.1
Wealth index	V190	Poorest	2115	19.2
		Poorer	2157	19.6
		Middle	2186	19.9
		Richer	2259	20.5
		Richest	2278	20.7
Involvement in NGO activities	S116A	Belongs to Grameen Bank (yes, no)	1470	13.4
	S116B	Belongs to BRAC (yes, no)	932	8.5
	S116C	Belongs to ASHA (yes, no)	1225	11.1
	S116D	Belongs to PROSHIKA (yes, no)	90	0.8
	S116E	Belongs to BRDB (yes, no)	127	1.2
	S116F	Belongs to Mothers Club (yes, no)	3	0.0
	S116G	Belongs to other organisation (yes, no)	1583	14.4

Note: Total study sample: 10,996 women aged 15-49 years.

Table 3: Percent distribution of women's participation in economic activities by selected variables (BDHS, 2007)

Variable	N	Non-employed	Professional	Business	Semi-skilled labour	Farmer/ poultry worker	Unskilled labour	Other
Age of women:								
15-24	3599	74.1	0.7	1.2	9.6	12.1	2.3	0.0
25-34	3590	59.5	1.7	1.7	10.3	20.9	5.9	0.1
35+	3807	61.8	1.1	3.3	7.8	19.8	6.0	0.2
Marital status:								
Divorced/separated/widowed	804	43.1	0.7	4.7	14.8	13.6	22.4	0.6
Currently married	10192	66.8	1.2	1.9	8.8	17.9	3.4	0.1
Number of living children:								
0	1212	73.3	1.8	0.8	11.1	8.6	4.2	0.2
1-2	5144	65.0	1.6	2.1	10.2	16.2	4.7	0.1
3+	4640	63.3	0.5	2.4	7.6	21.5	5.0	0.1
Type of place of residence:								
Urban	2482	67.6	2.1	2.5	14.5	5.4	7.7	0.1
Rural	8514	64.3	0.9	2.0	7.7	21.1	3.9	0.1
Geographical regions:								
Barishal	662	76.1	1.4	2.1	6.5	10.9	3.0	0.0
Chittagong	2023	76.2	0.9	1.1	10.0	8.0	3.7	0.1
Dhaka	3431	63.7	1.1	1.7	9.8	18.6	5.0	0.1
Khulna	1396	60.6	1.6	3.2	9.7	20.4	4.5	0.0
Rajshahi	2776	53.5	1.2	3.0	9.6	27.1	5.5	0.1
Sylhet	707	83.3	0.8	1.0	4.4	4.1	6.1	0.3
Education of respondent:								
No education	3746	56.1	0.1	3.0	8.0	22.8	9.6	0.3
Primary	3263	65.5	0.2	2.1	8.5	20.0	3.7	0.0
Secondary	3341	74.2	0.6	1.4	10.6	12.0	1.1	0.0
Higher	646	66.8	15.8	0.3	12.4	3.9	0.8	0.0
Partner's education:								
No education	3915	57.5	0.0	2.3	8.8	23.2	8.0	0.2
Primary	2888	66.3	0.1	2.6	8.5	17.9	4.4	0.1
Secondary	2846	70.1	0.7	2.0	10.4	14.1	2.6	0.0
Higher	1334	73.2	7.7	0.7	9.7	8.0	0.6	0.0
Wealth index:								
Poorest	2115	52.8	0.0	2.3	5.8	30.7	7.9	0.4
Poorer	2157	59.4	0.3	2.6	9.6	22.9	5.1	0.0
Middle	2186	67.6	0.4	1.7	8.3	17.7	4.4	0.0
Richer	2259	68.9	1.4	2.7	11.2	13.4	2.5	0.0
Richest	2278	75.6	3.6	1.2	11.1	4.6	4.0	0.0
Involvement in NGO:								
Yes	4109	55.9	0.8	3.6	11.7	22.6	5.3	0.0
No	6883	70.9	1.4	1.2	7.8	14.6	4.4	0.2

Table 4: Percent distribution of women employment as well as NGO activities in Bangladesh (BDHS, 2007) by selected variables

Variables	Employment status			NGO involvement		
	Employed	Non-employed	χ^2 test P value	Involved	Non-involved	χ^2 test P value
Age of women:						
15-24	26.0	74.0	0.000	30.6	69.4	0.000
25-34	40.6	59.4		41.6	58.4	
35+	38.3	61.7		39.9	60.1	
Marital status:						
Divorced/separated/widowed	57.0	43.0	0.000	29.2	70.8	0.000
Currently married	33.3	66.7		38.0	62.0	
Number of living children:						
0	26.7	73.3	0.000	18.6	81.4	0.000
1-2	35.2	64.8		36.8	63.2	
3+	37.0	63.0		43.0	57.0	
Type of place of residence:						
Urban	32.5	67.5	0.000	33.4	66.6	0.000
Rural	35.8	64.2		38.6	61.4	
Geographical regions:						
Barishal	24.0	76.0	0.000	42.3	57.7	0.000
Chittagong	24.0	76.0		27.7	72.3	
Dhaka	36.3	63.7		37.1	62.9	
Khulna	39.5	60.5		46.2	53.8	
Rajshahi	46.5	53.5		42.2	57.8	
Sylhet	16.8	83.2		25.6	74.4	
Education of respondent:						
No education	43.9	56.1	0.000	42.9	57.1	0.000
Primary	34.5	65.5		41.8	58.2	
Secondary	25.9	74.1		30.3	69.7	
Higher	33.2	66.8		19.7	80.3	
Partner's education:						
No education	42.6	57.4	0.000	43.8	56.2	0.000
Primary	33.7	66.3		41.2	58.8	
Secondary	29.9	70.1		32.2	67.8	
Higher	26.8	73.2		21.4	78.6	
Wealth index:						
Poorest	47.2	52.8	0.000	42.6	57.4	0.000
Poorer	40.7	59.3		43.8	56.2	
Middle	32.6	67.4		40.8	59.2	
Richer	31.2	68.8		37.6	62.4	
Richest	24.5	75.5		23.0	77.0	
Involvement in NGO:						
Yes	44.2	55.8	0.000			
No	29.6	70.4				

Note: Others are subsequently included under the non-employed category.

Table 5: Logistic regression analysis showing the extent of the effects (odds ratio) of variables on women's participation in employment in Bangladesh (BDHS 2007)

	Unadjusted			Adjusted		
Variables	Odds ratio	95% CI	P value	Odds ratio	95% CI	P value
Age of women:						
15-24 (ref.)	1.000			1.000		
25-34	1.943	1.758-2.147	0.000	1.796	1.596-2.021	0.000
35+	1.768	1.601-1.952	0.000	1.577	1.379-1.805	0.000
Marital status:						
Divorced/separated/widowed (ref.)	1.000			1.000		
Currently married	0.376	0.325-0.435	0.000	0.383	0.327-0.449	0.000
Number of living children:						
0 (ref.)	1.000			1.000		
1-2	1.487	1.294-1.710	0.000	1.126	0.968-1.311	0.125
3+	1.614	1.402-1.857	0.000	0.949	0.799-1.128	0.555
Type of place of residence:						
Large city (ref.)	1.000			1.000		
Small City	1.064	0.847-1.336	0.595	0.792	0.616-1.018	0.069
Town (Municipality)	1.196	0.987-1.449	0.068	0.965	0.782-1.191	0.741
Rural (countryside)	1.236	1.089-1.401	0.001	0.747	0.635-0.879	0.000
Geographical regions:						
Khulna/Rahshahi/Barishal	1.237	1.130-1.354	0.000	1.160	1.052-1.280	0.003
Chittagong/Sylhet	0.498	0.444-0.558	0.000	0.516	0.457-0.583	0.000
Dhaka (ref.)	1.000			1.000		
Education of respondent:						
No education	1.575	1.321-1.879	0.000	0.729	0.569-0.934	0.012
Primary	1.060	0.886-1.268	0.523	0.610	0.477-0.768	0.000
Secondary	0.701	0.585-0.840	0.000	0.549	0.447-0.693	0.000
Higher (ref.)	1.000			1.000		
Partner's education:						
No education	2.030	1.771-2.328	0.000	1.318	1.083-1.603	0.006
Primary	1.386	1.201-1.601	0.000	1.150	0.950-1.393	0.152
Secondary	1.166	1.008-1.348	0.039	1.180	0.986-1.411	0.070
Higher (ref.)	1.000			1.000		
Wealth index:						
Poorest	2.771	2.437-3.150	0.000	2.578	2.157-3.081	0.000
Poorer	2.121	1.865-2.412	0.000	2.246	1.890-2.668	0.000
Middle	1.497	1.313-1.706	0.000	1.716	1.449-2.032	0.000
Richer	1.402	1.230-1.597	0.000	1.644	1.405-1.923	0.000
Richest (ref.)	1.000			1.000		
Involvement in NGO:						
No (ref.)	1.000			1.000		
Yes	1.884	1.739-2.042	0.000	1.621	1.487-1.768	0.000

Note: Odds ratio f or reference category (ref.) is 1.00

Table 6: Logistic regression analysis showing the extent of the effects (odds ratio) of variables on women's participation in NGO activities in Bangladesh (BDHS 2007)

	Unadjusted			Adjusted		
Variables	Odds ratio	95% CI	P value	Odds ratio	95% CI	P value
Age of women:						
15-24 (ref.)	1.000			1.000		
25-34	1.617	1.467-1.782	0.000	1.344	1.198-1.508	0.000
35+	1.507	1.369-1.659	0.000	1.200	1.052-1.368	0.007
Marital status:						
Divorced/separated/widowed (ref.)	1.000			1.000		
Currently married	1.490	1.273-1.744	0.000	1.552	1.314-1.834	0.000
Number of living children:						
0 (ref.)	1.000			1.000		
1-2	2.545	2.179-2.973	0.000	2.223	1.891-2.614	0.000
3+	3.300	2.823-3.857	0.000	2.508	2.094-3.005	0.000
Type of place of residence:						
Large city (ref.)	1.000			1.000		
Small city	2.093	1.679-2.609	0.000	1.581	1.243-2.012	0.000
Town (Municipality)	1.493	1.230-1.812	0.000	1.275	1.034-1.573	0.023
Rural (Countryside)	1.638	1.439-1.864	0.000	0.943	0.802-1.109	0.476
Geographical regions:						
Khulna/Rahshahi/Barishal	1.302	1.190-1.424	0.000	1.212	1.100-1.335	0.000
Chittagong/Sylhet	0.632	0.567-0.705	0.000	0.571	0.509-0.641	0.000
Dhaka (ref.)	1.000			1.000		
Education of respondent:						
No education	3.079	2.509-3.778	0.000	1.319	1.010-1.716	0.042
Primary	2.934	2.388-3.607	0.000	1.405	1.088-1.813	0.009
Secondary	1.779	1.446-2.190	0.000	1.200	0.944-1.524	0.136
Higher (ref.)	1.000			1.000		
Partner's education:						
No education	2.860	2.473-3.307	0.000	1.889	1.557-2.291	0.000
Primary	2.568	2.209-2.984	0.000	1.832	1.518-2.211	0.000
Secondary	1.740	1.493-2.027	0.000	1.427	1.195-1.706	0.000
Higher (ref.)	1.000			1.000		
Wealth index:						
Poorest	2.486	2.182-2.832	0.000	1.706	1.435-2.029	0.000
Poorer	2.604	2.288-2.964	0.000	2.009	1.701-2.373	0.000
Middle	2.304	2.024-2.623	0.000	1.926	1.639-2.263	0.000
Richer	2.015	1.770-2.294	0.000	1.830	1.573-2.129	0.000
Richest (ref.)	1.000			1.000		

Note: Odds ratio f or reference category (ref.) is 1.00. Geographical region: Khulna/Rahshahi/Barishal are considered together as *North-western region*

Women's Participations in Economic and NGO Activities in Bangladesh:
An Empirical Study on the Bangladesh Demography and Health Survey (BDHS)

Abstract

This study examines key factors affecting the economic involvement of women in Bangladesh and women's involvement with Non-Governmental Organisations (NGOs) operating in that country. Quantitative analysis was utilised to explore data contained in the Bangladesh Demographic and Health Surveys 2007 and 2011. The findings indicate that age, marital status, number of children living in the household, place of residence, geographical location, education, partner's education and the wealth index are important factors in enabling women's involvement in economic activities. In other words, the key findings emerged from the study are firstly, the low level of women's economic activities in Bangladesh with a majority involved in farming, agriculture and poultry; secondly, those women involved in the labour market generally tended to come from poor backgrounds, have very little education, live in the Northwest geographical region and have a large family living in the same house; and finally, age, currently married, having a higher number of children, living in rural areas, from the Northwest region with almost no education and belonging to the poor wealth index quintile are found to be associated more with NGO activities in Bangladesh. The findings indicate there are potential barriers that are preventing Bangladeshi women from engaging in the labour market that could reinforce the case for reshaping the Government's labour policies. The study reveals that the recent economic crisis has no significant impact on the women labour force participation as well their involvement in NGO activities in Bangladesh. It is generally understood that enhancing women's economic participation and NGO activities has a positive impact at family, community and country levels. The study concludes that investing in women, particularly in creating employment opportunities including NGO sectors can help the country as a safeguard even during the economic crisis. It is anticipated that the findings will help policy-makers in enhancing female labour-force participation as well as encouraging them to engage in NGO activities in Bangladesh.

Key words: Female labour force participation, NGOs, BDHS, logistic regression, poverty, economic activity, microcredit, Bangladesh.

Introduction

The economic contribution of women and their involvement with the third sector are subjects of interest in contemporary literature particularly in the social sciences (see for example, Amin et al., 1998; Kabeer, 2005; Pitt et al., 2006; Rahman and Khan, 2013; Bradshaw et al., 2013; Verick, 2014). Bangladesh is a developing country with a majority Muslim population and women's participation in labour force activities has not been an easy one particularly due to socio-cultural reasons. It is often in discussion as to how Bangladesh has been so successful in utilizing its female population in economic activities where Islam as a religion is still play vital role in shaping people's life. On the other hand, Bangladesh is also well known as a country with huge success in the growth and development of NGO sectors and a vast majority of workforce are females. Women are generally targeted to give jobs in garments and NGO sectors and loans are being granted for small business purposes. Over the last two decades, micro-credit programmes have proved very popular in Bangladesh and have

provided a focal point for discussions about the reduction of poverty. Government alongside with NGOs have come forward to involve women in labour force activities through micro-credit programme. However, little is known on the dynamics of women's participation in labour market and NGO sectors. Moreover, it is worthwhile to study the degree to which economic crisis has impacted on the labour market in Bangladesh. Considering all these points, the study aims to identify key determinants of the women's participation and NGO activities in Bangladesh.

According to the 2012 Micro-Credit Summit[1] almost 205.30 million poor people around the world are involved in micro-credit activities; of these, 137.55 million first-time borrowers are the poorest[2] and over 82 per cent of them are women. It is also reported that women who are involved in micro-credit programmes become more confident and are able to lead a decent life along with their family members (see for example, Kabeer, 2005; Osmani, 2007; Kato and Kratzer, 2013; Rahman and Khan, 2013). Micro-credit enables poor families to tackle various shocks affecting their lives, including environmental problems such as flooding, because their family income has increased. Women's involvement in social networks provided by NGOs can also offer support so enabling women to successfully get through such difficulties. A micro-credit programme therefore can help provoke a great transformation in a developing country, particularly for poor women living in rural areas.

In 2008, nearly 1.29 billion people across the world were living on less than $1.25 a day (World Bank, 2012). The poverty rate in Bangladesh reduced from 40 per cent in 2005 to 31.5 per cent in 2010 (BBS, 2011). NGOs and Micro Finance Institutions (MFIs) in Bangladesh are mainly targeting women in order to bring them into the micro-credit programmes and they provide various services such as education, maternal health and family planning, and training in income generating activities. According to the NGO Affairs Bureau Bangladesh (2011) there are over two thousand MFIs in the country all working with poor women to pull them out of poverty. According to BRAC (2011), about 2.32 million women in Bangladesh have received various types of services including asset, soft loan and financial support. BRAC Bangladesh has provided training in income generating activities (IGAs) to 1.33 million women, provided maternal services to poor women living in rural areas and also provided maternal, neo-natal and antenatal services to 5.7 million women living in urban areas in Bangladesh. The Grameen Bank (2011) claimed 8.35 million micro-credit borrowers in Bangladesh of which, 96 per cent were women and another large NGO, ASA Bangladesh (2011) claimed more than 5.01 million borrowers in Bangladesh of which 79 per cent were women.

As indicated, the vast majority of the beneficiaries of micro-credit loans are women for which there are several reasons. Epstein and Kim (2007) explained that foreign policy makers have increasingly focused on micro-credit programmes for women because they have recognised that not only is it a form of gender discrimination to leave women aside from such facilities but it is also an obstacle to economic and social development. Micro-credit programmes have brought women into the cash economy and are encouraging them to be trained in entrepreneurial skills that then help to stimulate economic growth. Some studies suggested that MFIs tend to lend money to women because they are more likely to repay the loans than are men and they are also more likely to spend their incomes on the welfare of their families. Women are playing substantial roles in sustaining micro-credit programmes because of their low drop-out and high recovery rates that are further encouraging the trend of targeting women (Khandker et al., 1995).

Although microcredit has been considered as an effective method for empowering women and more specifically as an economic means of lifting people out of poverty, however, in recent years critics have brought to light some of the problems associated with micro-credit particularly the way it operates lending, programmes as such that targets women

group as a whole (Levin, 2012). Micro-credits sometimes do more harm than good to the poorest (Tripathi, 2006). One reason could be the high interest rates charged by microcredit organizations. In this paper, we focus only on women's employment in general and to what extent it relates to NGO activities in Bangladesh.

Economically Inactive versus Non-employed Women in Bangladesh

The 2010 Labour Force Survey (LFS) states that those people engaged in household work plus students and others including beggars, pensioners, income recipients and the disabled are economically inactive (BBS, 2011). Women who are engaged in such tasks such as child care, cooking food and taking care of elderly relatives are therefore considered to be economically inactive. Efroymson at el. (2006) revealed that women in Bangladesh work as much as 16 hours per day at various unpaid household tasks including activities such as farm work, helping in the family business and so on. However, due to the low level of education amongst women in Bangladesh, they are economically dependent on male relatives in three phases throughout their lifetime: first with their father, then a husband and then a son. According to 2010 LFS, of the 38.9 million economically inactive people in Bangladesh, 30.6 million are women. Of the total inactive women, as many as 25.1 million (81.7 per cent) were engaged in household work followed by students at 2.2 million (10.3 per cent) with others at 3.3 million (8.0 per cent). Of the inactive 8.4 million males in the population, only 1.4 million (13.9 per cent) were engaged in household work, 4.6 million (54.6 per cent) were students and 2.6 million (31.5 per cent) were others (BBS, 2011).

The definition of "unemployment" is as recommended by the International Labour Organisation (ILO) based on the context of Bangladesh that is followed by the LFS. So a person aged 15 years and above is considered to be unemployed if s/he did not work at all, even for an hour in the reference week or during the preceding week of the survey but was actively looking for a job or, was available for work but did not due to illness or because there was no work available. The 2010 LFS also states that people who work in a family business for less than 16 hours per week and do not get paid for that work then they are also unemployed. However, LFS 2010 argued that many of those considered as unemployed generally do perform some work in a family enterprise or other place and are not actually unemployed (BBS, 2011). The above definition of unemployment therefore may be problematic. If the survey was conducted during the lean season then the rate of unemployment would be higher. For example, in the northwest region of Bangladesh, a large number of people are unemployed mainly during two periods in a year: March-April and September-November. Since many women assist in a family business and in farming alongside their full time household work, they could be seen as either unemployed because they do not actively look for a job or seen as economically inactive. The term "non-employed" includes people like stay-at-home mothers and retired people who are not employed but may not be looking for work (i.e., out of the work-force at the time of survey). If a woman is found to be engaged in economic activities in Bangladesh then this is considered to show that they are "employed".

Participation Trends in the Female Labour Force

Bangladesh has a population of over 155 million with the majority living in rural areas. The economy of the country is predominantly dependent on the service sector, agriculture, garment exports, and some foreign remittances. According to the Bangladesh Bureau of Statistics (BBS, 2008), the number of women in the labour force increased from 5.4 million in 1995-96 to 12.1 million in 2005-06. In the same time periods, the number of men in the

labour force increased from 30.6 million to 37.3 million. There were 23 million people of working age in the population (15 years of age and over) in urban areas and 72 million in rural areas (Khuda, 2014). It appears that the participation of women in the labour force in Bangladesh is very low, standing at just one-third of the participation of men (Hossain et al., 2004; Khuda, 2014). However, although there is no noticeable change in the rate of male participation within the period 1999-2010, LFS statistics show that at the country level there is an increasing trend for female participation in Bangladesh (BBS, 2002). This trend was seen to be declining in India from 2010-2012 (Verick, 2014).

Table 1 shows the labour force participation of those aged 15 years or more by age and gender. The distribution indicates that there is still a huge gap in economic activity rates between men and women as well as across various age cohorts. Overall, men appear to be dominating the labour force in Bangladesh. For instance, the participation of men in the 60 years or above age group is higher compared to their female counterparts. Participation of older women in 2005/06 seems to be exceptionally higher than expected and this requires further investigation. On the other hand, the participation rate of women noticeably increases for the age cohort 20-49. This could be explained by the revolutionary increase in the numbers of girls enrolling in school that started two decades ago. Moreover, increasing job opportunities for girls in various sectors including NGOs and garments seemed to play important role. All these have had tremendous impacts in recent years by increasing the participation of women in the labour force.

Table 1 about here

Nature of Women's Economic Activities in Bangladesh

The majority of women in Bangladesh have tended to engage in home management activities while men have usually tended to work outside the home such as in agriculture, trading, marketing and so on. The absence of women's participation indicated in official agricultural statistics is primarily due to deeply embedded social and cultural norms of patriarchy (a set of social relations with a material base that enables men to dominate women) and *purdah* that proscribes the seclusion of women including severe restrictions on their movement outside of their homes (see for example, Paris et al. 2004; Asadullah and Wahhaj, 2012). The International Rice Research Institute (IRRI) conducted Focus Group Discussions (FGD) among men and women separately covering 62 villages in 57 Districts in Bangladesh. This nationwide survey was initially conducted in 1987 and then again in 2000 to gain an understanding and provide information about women's economic activities. In this study, the IRRI found that cooking food for family members is a major responsibility of women as is preserving rice seeds while also being heavily involved in household maintenance, reproductive activities, taking care of elderly relatives, nursing family members when they get sick and tutoring children. Women have been performing economic activities such as raising cattle and poultry, in vegetable production, gardening, post-harvest, agro-forestry and importantly, income increasing, or expenditure saving activities (Kabeer, 2001). There are also seasonal variations of women's economic activities in rural areas in Bangladesh (Paris et al., 2004). For example, during the peak seasons of rice production (usually running from July to December) men are busy with harvesting and women with post-harvesting activities such as drying-up rice. There are two seasons during the year for rice production that take about six months each with a special type of production during the winter season (November-March) called *Boro* in Bengali that takes place in some parts of Bangladesh. So women living in those parts of the country are usually busy with post-harvesting activities in the winter season as well. For instance, women will sew clothes, make indigenous mats and quilts and

different types of baskets as well as foodstuffs and then sell them either at the local market or to their neighbours during the off-peak seasons. Moreover, they can be raising cattle and poultry and selling milk and eggs in order to help meet the needs of their families as well as constructing mud stoves for boiling large volumes of rice.

According to Bhatt (1989), women who have engaged in these activities have been labelled as 'marginalised', 'informal, 'unrecognised, 'peripheral', and 'black economy workers' implying that they are inferior and insignificant while in actual fact, they are making a major contribution to the central economy. Bhatt suggested that it would be better to refer to these women workers as 'self-employed' to enhance their status. So in actuality women have been actively engaged in economic activities throughout the year that help boost the family income. It is unfortunate that their contribution remains invisible in the economy. The Bangladesh Home Workers Women's Association (BHWA) revealed that the estimated annual contribution of home-based workers to GDP is about TK.150 billion (Islam, 2006). Some studies have pointed out that men do not even appreciate women's household work in Bangladesh or their economic activities (Mehra, 1997; Sen, 1997; Bhatt, 1989; Efroymson et al., 2006; Sadaquat and Sheikh, 2011). In the 1961 Census, women's household work was defined as "productive economic activity" but in the 1974 Census (the First Census after independence in 1971) women's household work was defined as "housewife" (Waring, 1998). This shows that Bangladeshi women did not change their activities after the country became independent but rather the perception and categorisation of their activities had changed.

In the 1980s, there were a plethora of studies on women's involvement in home production activities in Bangladesh (for example, Halim and McCarthy, 1985; Hossain et al., 1988) and the role of women's economic activities on development and poverty reduction continues to be an important area of investigation (see for example, McCarthy and Feldman, 1988; Rothschild and Mahmud, 1989; Jahan, 1990; Amin and Pebley, 1994; Hashemi et al., 1996). Shah (1986) conducted a study to investigate the role of women's economic activities between 1951 and 1981 in Pakistan. This study found that the socio-economic status of the households such as ownership of assets, husband's education and observance of *Purdah* are having an impact on the ability of women to participate in economic activities in Pakistan and Bangladesh (Kabeer, 2001).

The majority of the NGOs in developing countries concentrate on poor people and small-scale entrepreneurs to stimulate the development process. For example, most of the Self-Employed Women's Association (SEWA) in India and BRAC and the Grameen Bank in Bangladesh (Sen, 1997), focused particularly on improving women's economic status as well as changing perceptions of men towards women. As a result, the government and development agencies or donors including DFID, World Food Programme, UNICEF and Work Bank began to rely on NGOs in developing countries to accelerate the growth of the development process. Mehra (1997) revealed that women's capabilities, as part of building human capital, have been increased through improvements in access to education and a better health care service. However, there has been a much slower progress in terms of women's choices in accessing economic opportunities. Mehra (1997) is also concerned that globally only one-third of women are economically active whereas about half of women in East Asia and the Sub-Saharan are economically active. Women's participation in the labour force or involvement in economic activities depended significantly on the number of children, age, education, poverty status, women's wage rate and predicted male wage rate (Sultana et al. 1994; Aly and Quisi, 1996; Azid et al. 2001). It is, however, recognised that women work more hours than men particularly in low-income households, more hours in agricultural than in non-agricultural economic activities, and more hours as unpaid family labourers than as managers. Even if they do most of the work, men mostly control decision-making and have

ownership of household resources. As we have seen, since women do not have access to or control over household resources such as land and other consumer durables, they are further disadvantaged because of traditional cultural and social norms that confer power and privilege on men (Paris et al., 2004). Men target institutional services for career development and even when women are targeted, such as in micro-credit programmes, they are often used as a front and men keep control over managing the resources. Thus, it is acknowledged that women are disadvantaged by not being able to acquire knowledge about farm and non-farm production systems and technologies from the service sectors (Kabeer, 2001).

Women's contributions to household income and wellbeing through various economic activities have been on-going for a considerable time but, as indicated earlier, their contribution to the economy has largely been ignored (Elora, 2004; Bradshaw et al., 2013). Paris et al. (2004) said that since women's activities are not to be recognised outside those they perform within their immediate families then they will not be seen as being involved in field agricultural activities nor allowed to go to public places such as the market. In this way, the contributions of women to the economy and even their existence remain invisible to researchers but many women from poor households are getting involved in micro-credit programmes and attaining co-breadwinner status within the family through helping their male counterparts with post-harvest agricultural activities (Karim and Law, 2013). Torri and Martinez (2011) conducted research on a woman's community-based enterprise known as the Gram Mooligai Company Limited (GMCL) in Tamil Nadu, India that is promoted by the local NGOs in the Tamil Nadu State. They assessed the impact that GMCL was having on the capacity building of women and local development and showed that it is playing an important economic role by increasing the managing, marketing and entrepreneurial skills of women as well as enhancing their productive capacity. They also discovered that the work of GMCL was helping change perceptions towards women in India.

The ready-made garments (RMG) sector has emerged as the biggest earner of country's foreign currency and the sector contributes significantly to the GDP in Bangladesh. Since the 1980s there has been a rapid growth in the garment industry and it provides employment to around 4.2 million Bangladeshis, mainly women from low income families. Women account for about two-thirds of the total employment in the garment industry and it has played an important part in changing the employment scenario for women with little or no education (Rahman and Islam, 2013). It is worthwhile to mention that although the gender pay gap has been reduced significantly in many industries in Bangladesh, in general, women still tend to be paid less than men (Hossain and Tisdell, 2005). Employees union in garments sector seemed to have been less active in raising their voice regarding pay discrimination, on the other hand, garment owners associations are seen to be well organised in protecting their financial interests.

In this study, we define economic activities as those that are either generating income for the household or are saving household expenditure for the acquisition of goods from the market. This includes employment in the agricultural and non-agricultural labour market, but also unpaid work in crop cultivation, homestead gardening, livestock and poultry raising, fishing, cottage industry, transport operation, construction, business, and personal services. It excludes unpaid activities such as domestic activities. There are many other activities mostly performed by women that are quasi-economic but are not valued in national income accounting. For example, food-processing and preparation of meals for family members, taking care of children as well as the elderly and sick members of the household and tutoring of children. If households had to hire workers to perform these jobs then it would involve expenditure (Efroymson at el. (2006). The most recent employment status on women is used to consider all kinds of job involvements in last 12 months. Finally, Women's involvements in NGO activities are consider whether or not a woman has ever been involved with any sort

of NGO activities. The following section will discuss details on research methods. Then key results of the study will be highlighted before drawing a conclusion of the study.

Research Methods

The Data

The data for this study was extracted from the Bangladesh Demographic and Health Survey (BDHS) 2007, a nationally representative cross-sectional survey that is widely used by research communities. The detailed methodology of the survey including the data collection method and quality of the data was explained in the national report of the survey (NIPORT, 2009). In short, the survey covers the population residing in private dwelling units in Bangladesh and was based on the sampling frame of the 2001 population census. The sample was selected using a two-stage stratified technique, where 361 primary sampling units (PSUs) were selected in the first stage (227 from rural areas and 134 from urban PSUs). All households in the selected PSUs were recorded from January to March 2007. The resulting list of households was used as the sampling frame for selection of households in the second stage. On average, 30 households were selected from each PSU using an equal probability sampling technique. About 10,819 households were selected for the survey where 10,461 were occupied. Interviews were successfully completed in 10,400 households (99.4% of total households). A total of 11,178 eligible women aged 15-49 were identified in the selected households and 10,996 (6,845 from rural and 4,151 from urban) were interviewed for the women's questionnaire (the response rate is 98.4 per cent). The 10,996 women sample is used for the analysis in the paper. The BDHS is a nationally representative household survey that has been conducted in the country since 1993 at regular intervals, preferably once every two years, in order to generate vital statistics and population health indicators in Bangladesh. For many low and middle income countries this DHS survey is the only reliable source of information that can be used to carry out comparative studies across the world.

Tools of data collection and processing

The BDHS used the MEASURE DHS+ model questionnaires and were pre-tested before data collection. Information was collected about socio-economic and demographic characteristics, health and lifestyle factors, marriage and family planning, health care facilities, HIV/AIDS, sexually transmitted diseases (STD), and domestic violence. To ensure the quality of data, qualified personnel from Mitra and Associates, along with officials from the National Institute of Population Research and Training (NIPORT) were employed. Data processing was carried out between 16 April and 31 August 2007 using CSPro including editing, coding of open-ended questions, data entry, and editing inconsistencies observed in the computer programme and each stage of the survey was carefully monitored by USAID, NIPORT, Mitra and Associates, Ministry of Health, and Macro International USA (NIPORT, 2009).

In addition to 2007 BDHS, we employ the latest BDHS 2011 dataset in order to compare any noticeable change over time. About 17,749 women aged 15-49 years surveyed in the BDHS 2011 of which 4,619 and 13,130 women were successfully interviewed in urban and rural areas respectively. The methodology is same as all other previous BDHS and overall data quality are found to be valid and reliable. Variables selected in the paper have same definitions and measurements as of BDHS 2007 and thus allow us to carry out a comparative

analysis. The detailed survey methodology including an executive summary and a brief report is made available for further analysis (NIPORT, 2013).

Variables used for statistical analysis

Variables were carefully selected from the earlier studies to examine their effects on economic as well as NGO activities in Bangladesh. The description of variables and their measures along with the BDHS survey variable codes are presented in Table 2. The variable code helps the reader to view and check each question if wished. Variables are further classified according to their causality and the use of statistical models and are described as follows:

Dependent variables

Women's occupations are considered to examine the pattern of their economic engagement by their socioeconomic and demographic backgrounds. There is a long list of occupational categories in the BDHS survey which are reduced to a small number of categories as follows: i) non-employed, ii) professional, iii) business (small and large business), iv) semi-skilled labour (home based manufacturing; factory worker, blue collar services; semi-skilled labourer), v)farmer/poultry worker (land owner; farmer; agriculture worker; fisherman; poultry and cattle raising), vi) unskilled labour (rickshaw driver, brick breaking, road building construction work; domestic servant), vii) others (student; retired; other). Then two dichotomous dependent variables were considered to study women's participation in economic activities: i) women's participation in employment during the last 12 months or so (either employed or non-employed); and ii) women's involvement in NGOs activities as being actively involved or not involved at all.

Independent variables

From the large set of variables we selected those we felt to be relevant namely, age of the women, marital status, number of living children, urbanisation, geographical regions, educational status of respondents and their partners, asset quintiles and involvement in NGOs. Definition and measurement of the variables are illustrated in Table 2. The variables were selected based on existing literature and theories (Becker, 1961; Hossain et al., 2004) on women's participation in economic activities.

Statistical tools used for analysis

Firstly, we performed a univariate analysis and presented descriptive information about the study sample along with women's participation in employment activities by selected variables. Secondly, the bivariate association of the two outcome variables (women's participation in employment and women's participation in NGO activities) with each of the selected independent variables (including p-values of the test statistics for testing the null hypothesis of no association) was reported based on the Chi-square test (Chan, 2003). Finally, we performed a univariate as well as a multivariable binary logistic regression analysis for both dichotomous dependent variables. Univariate analysis provides the direct effect of a variable without controlling for any covariates and we call it the *unadjusted effect*. On the other hand, the *adjusted effect* of a variable is calculated when all remaining variables are controlled for. We reported the odds ratio (OR) and the 95% confidence interval (CI) for adjusted and unadjusted cases to show summary statistics of the univariate as well as

multivariable models. The effect measures the likelihood of involvement in economic activity and the strength of the effect is captured by the odds ratios (each group is compared with the reference group). The reference groups are carefully selected in the paper and are consistent with the past research studies and reliable in terms of sample size.

In brief, for a logistic regression model, women's participation in employment was dichotomized as "yes = 1, if participated in any employment in the last 12 months of the survey" and "no = 0, if no participation in employment". Likewise, 1 is coded if a respondent belongs to an NGO, otherwise 0 is coded and thus we can also construct an appropriate logistic regression model for women's participation in NGO activities.

For general understanding, the dependent variable y being a binary variable that equals '1' if the respondent has any employment, and '0' for otherwise. Thus the following logistic regression model is considered for the multivariate analysis and this is to be fitted for both BDHS 2007 and 2011 datasets.

$$\text{logit}\ (p_i) = \ln\left(\frac{p_i}{1-p_i}\right) = \beta_0 + \beta_1 x_{1i} + \beta_2 x_{2i} + ... + \beta_k x_{ki} + \varepsilon$$

Where p is the probability of being occurring y = 1, β_o indicates the intercept of logistic regression model, β_i (i=1, 2,...,k) are the linear regression coefficients indicating the effects of the independent variables and ε is error term. A detailed explanation of the model can be found elsewhere (Khan and Raeside, 1997; Hosmer and Lemeshow, 2001; Chan, 2004; Khan and Flynn, 2015).

Results and Discussions

Descriptive analysis

Table 2 shows the summary statistics of the characteristics of the respondents used in the paper. This study found that a vast majority of women (about 65%) are non-employed at the time of the survey. However, 17.6% are engaged in farming and poultry-related works. More than 9% of women are employed in the semi-skilled labour sector, nearly 5% of them in unskilled labour or doing other types of jobs. Therefore, in the survey, about 35% of women are found to be employed for the last 12 months. The proportion of respondents is equally distributed across the age cohorts 15-24, 25-34 and 35-49 years. The vast majority of women (93%) are currently married. About 11% of respondents reported that they have no children in their family with a majority having at least one child in the household. Nearly 77% of respondents live in rural areas and the rest (23%) living in urban areas. In terms of geographical locations, a majority (31%) of respondents surveyed came from the Dhaka Division followed by 25% from Rajshahi Division, and 18% from Chittagong Division. The lowest proportion (6%) came from Barishal and Sylhet Divisions. In the survey, the highest proportion of women (34%) did not have any formal education and a small percentage (about 6%) had college and university level education. A similar trend is also observed in terms of a partner's education although proportion of higher education is found to be almost double than the women counterparts. Proportion of women is more or less equally distributed by the wealth index. Social activity (predominantly NGO economic activities) is becoming popular and socially acceptable in Bangladesh. As mentioned earlier, both NGOs and MFIs are providing micro-credit to poor people in order to improve the borrower's socio-economic status (Rahman, 2010; Farazi, 2011). Lastly, it was found that about 14% of women belong to 'another organisation', followed by the Grameen Bank (13.4%) and ASA (11.1 %).

Table 2 about here

Table 3 describes women's economic status and occupations by selected characteristics. By and large, most women were found to have no job at the time of the survey (higher for those aged below 24 years) and about 63 per cent were found to have no involvement in NGO activities. A small proportion of women were engaged in professional jobs, but the proportion is observed to be higher among those who were over 25 years old, married, had no children, lived in urban areas and had the highest education along with a partner's highest level of education, and also were the richest and less involved in social activities. Women who were involved in business were relatively more active in NGO activities, had no formal education, lived in the northern part of the country, were more likely to be divorced, separated, or widowed, aged over 35, and to have three or more children living in the household. Farming, agriculture and poultry were the important sectors where women were contributing significantly. Women who belonged to this group were comparatively older in age, presently married, with three or more children in the household, living in a rural area, coming from the northern part of the country, no formal education, no partner education, poorest of the poor and involved in NGO activities. The results help to in understanding women's socioeconomic and demographic situations and how they are related to various employment activities in Bangladesh.

Table 3 about here

We observe that various factors are associated with types of employment activities in Bangladesh although some categories only had small samples. It is, therefore, worthwhile to examine the degree to which factors are associated with women's economic activities over the past 12 months.

It is shown in Table 4 that age, marital status, number of living children, types of residence, geographical regions, education of respondent as well as partner's education, wealth index and involvement in NGOs are strongly related to engagement in work activity in Bangladesh. The χ^2 test with its *p-value* (zero or close to zero) shows the statistical significance. Table 4 also demonstrates the frequency distribution of women actively engaged in the workforce, for example, more women in the age group 25-49 are involved in work than those in the 15-24 age group. Similarly, women with no education, no partner education, the poorest group of the society and those involved with NGOs were found to be more economically active.

Table 4 about here

Likewise, Chi-squared tests are performed for the selected variables to examine whether any association existed between the selected variables and NGO activities. As we have shown, almost all NGO activities are related to micro-credit programmes. It can be seen from Table 4 that age, marital status, number of children, type of place of residence, geographical regions, education of women and their partners, and the wealth index are found to be strongly associated with NGO activities. Women aged over 25 years are more likely to have an involvement in NGO activities compared to their younger counterparts. Number of children in the household is positively associated with woman being involved in NGO activities. A higher proportion of women involved in NGOs are in a rural location than an urban location. The highest proportion of women involved in NGO activities had no formal education with a similar pattern observed for a partner's education. Table 4 also shows that

women from the poorer wealth cohort are likely to be more involved in NGO activities than their richer counterparts.

From the Pivotal analysis it is difficult to confirm the net effects that independent variables and their categories have and so we applied advanced statistical techniques to tease out the effects of the variables in this study. Given the kind of problem being addressed in the paper and data sources we develop logistic regression models and the results are illustrated in Tables 5 and 6.

Logistic Regression Analysis

Logistic regression model is widely used in social science research and it is fairly easy to interpret the results of fitted regression models. The results of the logistic regression analysis for women's participation in economic activities are presented in Table 5. Both univariate as well as multivariate logistic regression models were constructed to evaluate the effects of predictors for unadjusted and adjusted effects. An unadjusted model deals with effects of a variable in the absence of other predictors, however, the adjusted model includes all predictors in multivariate analysis. This allows us to determine effect of co-variate by controlling for other predictors. The purpose of using both unadjusted and adjusted is to evaluate the changes in effects with selected predictors in models. Both effects are discussed simultaneously in this section. This study found that women aged over 25 years are more likely to be engaged in employment activity compared to the younger age cohort. The effect is found to be 1.796 times higher with 95% CI (1.595-2.021) for the age cohort 25-34 and 1.577 times higher with 95% CI (1.379-1.805) than the reference group 15-24 age cohort. Similar kind of result is also found in case of BDHS 2011. Currently, married women are less likely to have engaged in work even after controlling for other variables and are found to be 61.7% lower than divorced/separated/widowed group (OR=0.383, 95% CI: 0.327-0.449). In 2011 BDHS data analysis, we have found the similar trend in effects.

The number of children living in a household had strong positive effects on economic involvement. This study found that the higher the number of children living in the household the higher the chance of a woman participating in economic activities. In Table 5, those who had 3 or more children had a 1.614 times (95% CI: 1.402-1.857) higher chance of involvement in economic activities than those who had no children. Similarly, women who had one (1) or two (2) children had a higher probability of being involved (Odds Ratio =1.487, 95% CI: 1.294-1.710, $p<0.000$). However, the predictor becomes statistically insignificant when controlling for other variables in a multivariate model. This means that other factors may be more important than the number of children when modeling economic activities in Bangladesh. On the other hand, number of children is found to be negatively associated with women's NGO activities and the results are statistically significant. .

The place of residence is found to have a statistically significant effect on women's economic activities, for example, rural women are found to be less likely to engage in economic activities than those in urban areas (OR=0.0.800, $p<0.001$). It meant that when all other variables are considered in the model, rural women are found to have a 20% lower likelihood to be employed as compared to women from urban. This may be explained by the fact that job opportunities are higher in urban areas. Analysis of 2011 BDHS also shows similar result. Geographical region is considered as a predictor to estimate the effects of regional influences on continuing in economic activities. There are regional disparities in terms of income and job opportunities, for example, the Northwest region suffers from lack of job opportunities and low average income compared to the rest of the country. And because of that the Government has special programmes in those areas to support poor families tackling Monga[3] (seasonal food insecurity) in rural Bangladesh. The lean season

reduces peoples' access to income which is a shock to their livelihoods and fuels chronic poverty (Zug, 2006). This study revealed that women from the North West part of Bangladesh (Khulna, Rajshahi, Rangpur, and Barishal) have a higher chance (16.0 per cent) of being involved in the workforce compared to women in the Dhaka Division (OR=1.160, 95% CI: 1.052-1.280). In contrast, women from the Southeast part of Bangladesh (Chittagong and Sylhet regions in Bangladesh) have a 48.4% lower chance of being involved compared to the Dhaka regions (OR=0.516, 95% CI: 0.457-0.583). The analysis of BDHS 2011 data also reveals similar result. The Northwest region is poor compared to the rest of the country and women have to seriously look for a job in order to survive. On the other hand, it is widely known that women living in the South East of the country are restricted to their houses and are less likely to receive permission for working outside their homes by the head of the household who are usually men. Dhaka is often used as a reference category for comparative purposes as it is situated in the central part of the country and we believe it can provide a fair judgement on the likelihood of changes in circumstances in other areas. The results are consistent with existing literature.

Women's education is found to have an important predictor role in their engagement in economic activities. Generally speaking, lower education is associated with a less likelihood of being engaged in economic activities. The results of the univariate model show that women with secondary education had a 29.9 per cent lower chance of engaging in economic activity compared to those women who possessed a higher level of education. This is also found to be consistent while controlling for other remaining variables in the model and means that women with secondary education are found to have a 45.1 per cent lower chance for continuing in economic activity compared to women who possess a higher level of education. While analyzing the 2011 BDHS dataset we have found that nearly 62 per cent lower chance of getting a job. The results are expected because women's education plays an important role in their economic participation. On the other hand, a husband's education appeared to be an insignificant factor that means it has no significant association with women's participation in economic activities.

The wealth index is a good predictor for capturing the probability of involvement in economic activities. As it can be seen from Table 5, relatively poor women are more likely to be involved in economic activities than the richest counterparts. It is observed that the magnitude of the odds ratio is consistently changing with respect to various categories of the wealth index. For example, those who belong to the poorest, poorer, middle and richer categories are found to have 2.506, 2.184, 1.672 and 1.604 times higher chances respectively of being engaged in economic activities than the richest wealth group.

Women's involvement in NGO activities is used to examine whether or not it has any association with women's economic activities. Analysing the BDHS 2007 data it was found that women who are involved in NGO activities have an 88.4 per cent higher chance (95% CI: 1.739-2.042) of continuing employment than those who were not involved in at all. This unadjusted effect was the sole direct effect of women's NGO participation on continuing employment. Similar findings emerged when controlling for all remaining covariates (OR = 1.617, 95%CI: 1.487-1.768, $p<0.000$). The 2011 BDHS data analysis also show similar kind of result. The effects are found to be similar although has a slightly lower in 2011 than that of 2007. The decline might be partly because of last economic crisis. The wealth index gives us a clear indication that relatively poor background women are highly likely to involve in economic activities. It is stressed that women's NGO activities are positively associated with continue employment in labour market. Micro-credit programmes have been running successfully in Bangladesh and a major proportion of women are involved in at least one NGO activity. The NGO sectors employ a huge number of women in Bangladesh and

therefore it is worthwhile to investigate the key factors that are associated with NGO activities.

Table 5 about here

Because a variable such as "women's involvement in NGO activities" is a dichotomous variable we also fit a logistic regression model. Both univariate as well as multivariate models are constructed for the BDHS 2007. In addition, only multivariate model is built on the BDHS 2011 data to show comparison over time. All results are shown in Table 6. The findings revealed that the higher the age of women, the greater the likelihood of them being involved in NGO activities. The effects of variables remain unchanged over the period 2007-2011. Marital status was found to have a statistically significant effect on involvement in NGO activities. For example, the adjusted effect showed that currently married women have a 55.5 per cent higher probability of involvement in NGOs than any other group (OR=1.553, 95% CI: 1.317-1.837).

Women's participation in NGO activities may bring numerous benefits to a country's economy such as fertility and a decline in mortality as well as raising health awareness and education. This study found that women with a higher number of children are more likely to be involved in NGO activities in Bangladesh. For BDHS 2007 and 2011, both adjusted and unadjusted effects revealed that there are some consistent findings to support the statement that women generate money to feed and support the family and the support is even higher for those families that have a higher number of children (Table 6).

Urbanization has dominated some social science research because of its power to explain socio-cultural changes. In this study, we have considered it in order to examine how it may have influenced women to get involved in NGO activities. Such activities are more likely to be concentrated in the relatively developed region (urbanized) where better transport facilities and government and private facilities are available (Sharma and Zeller, 1999). Therefore, people who live in an urban area or proximity to an urban area are more likely to be participating in NGO activities. The study reveals that in both 2007 and 2011 surveys rural women have lower chance of engaging NGO activities than their urban counterparts. However, many NGOs or MFIs such as Grameen Bank, BRAC and ASA are working across the country to bring poor women into the traditional financial system. It is worth mentioning here that according to the Micro-credit Regulatory Authority (MRA), there are about 34 million clients who are actively involved in NGO activities and most of them are women from rural areas (MRA, 2011). Thus it could be argued that women who live in rural areas have the opportunity to get involved in NGO activities because of the abundance of micro-credit programmes.

Table 6 shows a significant variation in engagement with NGO activities across three geographical regions. Looking at the adjusted effects of geographical region, it could be interpreted that women in the Northwest region (Khulna, Rajshahi, Rangpur, and Barishal) have a higher chance of engaging in NGO activities compared with women in the Dhaka Division (OR=1.218, 95% CI: 1.135-1.373, $p<0.000$). On the other hand, women from the Southeast region (Chittagong and Sylhet) are found to have a 41 per cent lower chance (OR=0.590, $p<0.000$) of being involved in NGO activities. Similar kind of results is also found for the BDHS 2011. This can be partly explained by the fact that people in the Southeast region are comparatively better off than people in the Northwest region.

With regards to the level of education of the respondents, a lower level of education is associated with NGO activities. It can be seen from Table 6 that women with primary education have a 1.391 times higher chance of engaging in NGO activities than those who have a higher level of education even when controlling for other variables (95% CI: 1.088-

1.813). Analysis of the BDHS 2011 also shows the similar result. This emphasises the fact that the vast majority of women engaged in NGO activities come from poor educational backgrounds. A similar finding also emerged for the level of education of their partners. Both surveys indicate the fact that women are likely to engage in NGO activities when the partner education is relatively lower as compared with the higher educated partners.

Economists are always keen to understand the effects of wealth on social outcomes. Generally, this study indicates that poorer women are more likely to be active in NGO activities than richer women. For example, in an unadjusted model, the involvement in NGO activities of the poorest women is 2.486 times (95% CI: 2.182-2.832, p<0.000) higher than the richest group of women. On the other hand, for an adjusted model using the BDHS 2007 the wealth index for the poorest is found to be 1.706 (95% CI: 1.435-2.029). The result remains statistically important and consistent even after controlling for the other variables. Furthermore, the analysis of the BDHS 2011 also show similar trend which explains that women have higher chance of involving in NGO activities if they come from lower wealth index. Thus it can be concluded that the lower the wealth index quintile the higher the probability for involvement in NGO activities in Bangladesh.

Table 6 about here

Conclusions

This study examined the economic activities of women in Bangladesh on the basis of the macro-level data on women's participation in the labour force, continuity of their employment and participation in NGO activities. A set of socioeconomic and demographic characteristics of women was used including the age of the women, their marital status, number of living children, place of residence, geographical region, education and wealth index in order to examine the effects on women's economic activities in Bangladesh. Firstly, we attempted to understand the types of women's occupations in Bangladesh; secondly, we mapped women's continuity of employment, and finally, identified the key determinants of women's involvement in NGO activities as well as economic activities in Bangladesh. This study indicates that female labour force participation has been gradually increasing in Bangladesh but the rate is not an encouraging one when compared to participation of male counterparts. This indicates that a big gender gap still exists in labour market participation. Moreover, variation in economic participation is also found to be significant for age cohorts. It is suggested that policy-makers should take the finding seriously in order to balance equal participation by age and sex in labour market. The study has revealed that among those employed a vast majority of women are performing economic activities in farming, agriculture and poultry industries particularly in the homesteads. Women in Bangladesh have a long tradition of involvement in this sector and may well prefer to keep engaging in it because of socio-cultural norms. It is likely to be continued unless other sectors are developed in Bangladesh particularly in rural setting. In such a case, micro-credit may play an important role in income generation, alleviating poverty through entrepreneurship and more importantly encouraging people to involve in various types of economic activities (Rahman and Khan, 2013).

The findings indicate that age, marital status, number of children living in the household, place of residence, geographical location, education, partner's education and the wealth index are important factors in enabling women's involvement in labour market. In other words, those women involved in the labour market generally tended to come from poor backgrounds, have very little education, live in the Northwest geographical region and have a

large family living in the same house. The empirical findings confirm the theoretical linkages as to how socio-economic and demographic factors are associated with labour-force participation. In other words, it tells us why women are engaged in economic activities and how the government of the country can benefit out of the key findings of research. The results can be used for policy-making purposes at national as well as local authority level. The study shows that recent economic crisis has had negative effect on overall women's participation however, the decline is not found to be significant. On the other hand, there is no decline in NGO sector activities. This indicates that expanding NGO activities particularly micro-credit can help protecting the future economic crisis.

Relatively higher aged women, currently married (persons living in consensual unions or in visiting partnerships), having a higher number of children, living in semi-rural areas, from the North-West region with almost no education and belonging to the poor wealth index quintile are found to be associated more with NGO activities in Bangladesh. A recent study carried out by Rahman and Wright (2013) confirmed that about half of the ASA borrowers are landless and two-fifths of ASA borrowers in Bangladesh have no formal education. The present study has also confirmed that women who come from a poor financial background, currently married and who have a higher number of children living in the household are more likely to engage in economic as well as NGO activities in Bangladesh. It however suggests that the Bangladesh Government should invest in women's education and create more job opportunities for women particularly in the North-West region in order to enhance the country's economy.

Our findings clearly indicate there are potential barriers that are preventing Bangladeshi women from engaging in the labour market that could reinforce the case for reshaping the Government's labour policies. The study shows that education has a positive impact on labour market participation and then increasing educational opportunities can reduce the risk of labour market enrolment. It is generally understood that enhancing women's economic participation has a positive impact at family, community and country levels.

Although the study has carefully selected important variables for multivariate data analysis and assumes that there is no statistically correlation between selected independent variables, however, it appears to be a limitation in the study and thus future study should look at this issue by analysing correlation matrix for model building purposes. There are serious consequences of such limitation. Ignoring it at the analytical stage may mislead the findings of the study. Thus future study should check multicollinearity issues as part of diagnostic tests before developing models.

Acknowledgements:

Authors would like to express their gratitude to the two anonymous reviewers for their constructive comments and useful suggestions that helped us to improve the paper.

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Endnotes:

1. As on 31 December 2010, 3652 Micro Financial Institutions around the world reported their total number of borrowers.

2. According to the World Bank people are living on less than $1.25 a day, are under the poverty.

3. Monga is a seasonal food insecurity in ecologically vulnerable and economically weak parts of north-western Bangladesh, primarily caused by an employment and income deficit before aman2 is harvested. It mainly affects those rural poor, who have an undiversified income that is directly or indirectly based on agriculture.

Table 1: Labour Force Participation Rates in Percent (Aged 15 years or more) by Age and Gender: Evidence from *Labour Force Survey* (LFS) in Bangladesh

Age (in years)	1999-2000		2002-2003		2005-2006		2010	
	Male	Female	Male	Female	Male	Female	Male	Female
15-19	55.9	23.4	58.9	38.2	62.9	13.8	48.4	29.4
20-24	74.0	26.3	84.9	26.7	80.4	29.0	75.9	41.0
25-29	91.3	27.1	97.7	27.5	95.3	33.7	98.2	44.7
30-34	95.7	26.5	99.7	27.5	98.7	34.9	97.3	46.6
35-39	98.2	25.7	99.8	28.1	98.8	34.8	98.3	47.7
40-44	97.8	26.6	99.7	25.6	97.7	35.2	98.1	46.2
45-49	97.6	23.4	99.5	22.6	97.8	32.6	97.4	47.6
50-54	95.8	18.3	99.2	19.9	95.4	31.1	94.1	10.3
55-59	93.5	18.4	97.3	17.2	92.7	27.7	88.5	11.2
60-65	81.4	11.1	87.8	13.4	82.7	22.6	77.2	6.6
65+	56.6	9.0	66.1	8.7	59.3	14.8	-	-
Total	84.0	23.9	87.4	26.1	85.8	29.2	82.5	36.0

Sources: The Bangladesh Labour Force Surveys, 2000, 2003, 2006 and 2010 (BBS, 2002, 2004, 2008, 2011)

Table 2: Description of variables used in the study and their summary analysis (BDHS, 2007)

Characteristics of respondents	Survey question ID	Measurement of variables	N	%
Occupation of women	V716	Non-employed	7147	65.0
		Professional	128	1.2
		Business	230	2.1
		Semi-skilled labour	1015	9.2
		Farmer/poultry worker	1933	17.6
		Unskilled labour	523	4.8
		Other	11	0.1
Continuity of employment (worked in last 12 months)	V731	Otherwise	7145	65.0
		Employed all the year	3851	35.0
Age in years	V013	15-24	3599	32.7
		25-34	3590	32.7
		35-49	3807	34.6
Marital status	S105A	Divorced/separated/widowed	804	7.3
		Currently married	1019 2	92.7
Number of living children	V218	0	1212	11.0
		1-2	5144	46.8
		3+	4640	42.2
Type of place of residence	V025	Urban	2482	22.6
		Rural	8514	77.4
Geographical regions	V024	Barishal	662	6.0
		Chittagong	2023	18.4
		Dhaka	3431	31.2
		Khulna	1396	12.7
		Rajshahi	2776	25.2
		Sylhet	707	6.4
Educational attainment	V106	No education	3746	34.1
		Primary	3263	29.7
		Secondary	3341	30.4
		Higher	646	5.9
Partner's educational attainment	V701	No education	3915	35.6
		Primary	2888	26.3
		Secondary	2846	25.9
		Higher	1334	12.1
Wealth index	V190	Poorest	2115	19.2
		Poorer	2157	19.6
		Middle	2186	19.9
		Richer	2259	20.5
		Richest	2278	20.7
Involvement in NGO activities	S116A	Belongs to Grameen Bank (yes, no)	1470	13.4
	S116B	Belongs to BRAC (yes, no)	932	8.5
	S116C	Belongs to ASHA (yes, no)	1225	11.1
	S116D	Belongs to PROSHIKA (yes, no)	90	0.8
	S116E	Belongs to BRDB (yes, no)	127	1.2
	S116F	Belongs to Mothers Club (yes, no)	3	0.0
	S116G	Belongs to other organisation (yes, no)	1583	14.4

Note: Total study sample: 10,996 women. Same set of variables are also considered for BDHS 2011.

Table 3: Percent distribution of women's participation in economic activities by selected variables (BDHS, 2007)

Variable	N	Non-employed	Profe-ssional	Business	Semi skilled labour	Farmer/ poultry worker	Unskilled labour	Other
Age of women:								
15-24	3599	74.1	0.7	1.2	9.6	12.1	2.3	0.0
25-34	3590	59.5	1.7	1.7	10.3	20.9	5.9	0.1
35+	3807	61.8	1.1	3.3	7.8	19.8	6.0	0.2
Marital status:								
Divorced/separated/widowed	804	43.1	0.7	4.7	14.8	13.6	22.4	0.6
Currently married	10192	66.8	1.2	1.9	8.8	17.9	3.4	0.1
Number of living children:								
0	1212	73.3	1.8	0.8	11.1	8.6	4.2	0.2
1-2	5144	65.0	1.6	2.1	10.2	16.2	4.7	0.1
3+	4640	63.3	0.5	2.4	7.6	21.5	5.0	0.1
Type of place of residence:								
Urban	2482	67.6	2.1	2.5	14.5	5.4	7.7	0.1
Rural	8514	64.3	0.9	2.0	7.7	21.1	3.9	0.1
Geographical regions:								
Barishal	662	76.1	1.4	2.1	6.5	10.9	3.0	0.0
Chittagong	2023	76.2	0.9	1.1	10.0	8.0	3.7	0.1
Dhaka	3431	63.7	1.1	1.7	9.8	18.6	5.0	0.1
Khulna	1396	60.6	1.6	3.2	9.7	20.4	4.5	0.0
Rajshahi	2776	53.5	1.2	3.0	9.6	27.1	5.5	0.1
Sylhet	707	83.3	0.8	1.0	4.4	4.1	6.1	0.3
Education of respondent:								
No education	3746	56.1	0.1	3.0	8.0	22.8	9.6	0.3
Primary	3263	65.5	0.2	2.1	8.5	20.0	3.7	0.0
Secondary	3341	74.2	0.6	1.4	10.6	12.0	1.1	0.0
Higher	646	66.8	15.8	0.3	12.4	3.9	0.8	0.0
Partner's education:								
No education	3915	57.5	0.0	2.3	8.8	23.2	8.0	0.2
Primary	2888	66.3	0.1	2.6	8.5	17.9	4.4	0.1
Secondary	2846	70.1	0.7	2.0	10.4	14.1	2.6	0.0
Higher	1334	73.2	7.7	0.7	9.7	8.0	0.6	0.0
Wealth index:								
Poorest	2115	52.8	0.0	2.3	5.8	30.7	7.9	0.4
Poorer	2157	59.4	0.3	2.6	9.6	22.9	5.1	0.0
Middle	2186	67.6	0.4	1.7	8.3	17.7	4.4	0.0
Richer	2259	68.9	1.4	2.7	11.2	13.4	2.5	0.0
Richest	2278	75.6	3.6	1.2	11.1	4.6	4.0	0.0
Involvement in NGO:								
Yes	4109	55.9	0.8	3.6	11.7	22.6	5.3	0.0
No	6883	70.9	1.4	1.2	7.8	14.6	4.4	0.2

Table 4: Percent distribution of women employment as well as NGO activities in Bangladesh (BDHS, 2007) by selected variables

Variables	Employment status			NGO involvement		
	Employed	Non-employed	χ^2 test P-value	Involved	Non-involved	χ^2 test P-value
Age of women:						
15-24	26.0	74.0	0.00	30.6	69.4	0.00
25-34	40.6	59.4		41.6	58.4	
35+	38.3	61.7		39.9	60.1	
Marital status:						
Divorced/separated/widowed	57.0	43.0	0.00	29.2	70.8	0.00
Currently married	33.3	66.7		38.0	62.0	
Number of living children:						
0	26.7	73.3	0.00	18.6	81.4	0.00
1-2	35.2	64.8		36.8	63.2	
3+	37.0	63.0		43.0	57.0	
Type of place of residence:						
Urban	32.5	67.5	0.00	33.4	66.6	0.00
Rural	35.8	64.2		38.6	61.4	
Geographical regions:						
Barishal	24.0	76.0	0.00	42.3	57.7	0.00
Chittagong	24.0	76.0		27.7	72.3	
Dhaka	36.3	63.7		37.1	62.9	
Khulna	39.5	60.5		46.2	53.8	
Rajshahi	46.5	53.5		42.2	57.8	
Sylhet	16.8	83.2		25.6	74.4	
Education of respondent:						
No education	43.9	56.1	0.00	42.9	57.1	0.00
Primary	34.5	65.5		41.8	58.2	
Secondary	25.9	74.1		30.3	69.7	
Higher	33.2	66.8		19.7	80.3	
Partner's education:						
No education	42.6	57.4	0.00	43.8	56.2	0.00
Primary	33.7	66.3		41.2	58.8	
Secondary	29.9	70.1		32.2	67.8	
Higher	26.8	73.2		21.4	78.6	
Wealth index:						
Poorest	47.2	52.8	0.00	42.6	57.4	0.00
Poorer	40.7	59.3		43.8	56.2	
Middle	32.6	67.4		40.8	59.2	
Richer	31.2	68.8		37.6	62.4	
Richest	24.5	75.5		23.0	77.0	
Involvement in NGO:				-	-	-
Yes	44.2	55.8	0.00			
No	29.6	70.4				

Note: Others are subsequently included under the non-employed category.

Table 5: Logistic regression analysis showing the extent of the effects of variables on women's participation in employment in Bangladesh

Variables	2007 BDHS				2011 BDHS	
	Unadjusted Model		Adjusted Model		Adjusted Model	
	Odds Ratio	95% CI	Odds Ratio	95% CI	Odds Ratio	95% CI
Age of women:						
15-24 (ref.)	1.000		1.000		1.000	
25-34	1.943***	1.758-2.147	1.796***	1.596-2.021	1.735***	1.537-1.958
35+	1.768***	1.601-1.952	1.577***	1.379-1.805	1.567***	1.362-1.803
Marital status:						
Divorced/separated /widowed (ref.)	1.000		1.000		1.000	
Currently married	0.376***	0.325-0.435	0.383***	0.327-0.449	0.226***	0.197-0.260
Number of living children:						
0 (ref.)	1.000		1.000		1.000	
1-2	1.487***	1.294-1.710	1.126	0.968-1.311	0.783***	0.676-0.908
3+	1.614***	1.402-1.857	0.949	0.799-1.128	0.429***	0.361-0.510
Type of place of residence:						
Urban (ref.)	1.000		1.000		1.000	
Rural	1.158***	1.053-1.273	0.800***	0.710-0.902	0.411***	0.367-0.460
Geographical regions:						
Northwest	1.237***	1.130-1.354	1.160***	1.052-1.280	0.895*	0.808-0.991
Chittagong/Sylhet	0.498***	0.444-0.558	0.516***	0.457-0.583	0.800***	0.708-0.904
Dhaka (ref.)	1.000		1.000		1.000	
Education of respondent:						
No education	1.575***	1.321-1.879	0.729*	0.569-0.934	0.480***	0.384-0.600
Primary	1.060	0.886-1.268	0.610***	0.477-0.768	0.409***	0.332-0.505
Secondary	0.701***	0.585-0.840	0.549***	0.447-0.693	0.380***	0.315-0.457
Higher (ref.)	1.000		1.000		1.000	
Partner's education:						
No education	2.030***	1.771-2.328	1.318***	1.083-1.603	1.337***	1.096-1.631
Primary	1.386***	1.201-1.601	1.150	0.950-1.393	1.286***	1.065-1.555
Secondary	1.166*	1.008-1.348	1.180	0.986-1.411	0.975	0.820-1.160
Higher (ref.)	1.000		1.000		1.000	
Wealth index:						
Poorest	2.771***	2.437-3.150	2.506***	2.107-2.982	1.994***	1.664-2.390
Poorer	2.121***	1.865-2.412	2.184***	1.846-2.582	1.414***	1.182-1.692
Middle	1.497***	1.313-1.706	1.672***	1.419-1.972	1.340**	1.131-1.587
Richer	1.402***	1.230-1.597	1.604***	1.376-1.870	1.503***	1.299-1.740
Richest (ref.)	1.000		1.000		1.000	
Involvement in NGO:						
No (ref.)	1.000		1.000		1.000	
Yes	1.884***	1.739-2.042	1.617***	1.487-1.768	1.644***	1.498-1.804

Note: *Odds ratio f or reference category (ref.) is 1.00.*
Geographical region: Barishal, Khulna, Rajshahi and Rangpur being considered together as northwest region.
*Statistical significance if ***p<0.000, **p<0.01, and *p<0.05*

Table 6: Logistic regression analysis showing the extent of the effects of variables on women's participation in NGO activities in Bangladesh

Variables	2007 BDHS				2011 BDHS	
	Unadjusted		Adjusted		Adjusted	
	Odds Ratio	95% CI	Odds Ratio	95% CI	Odds Ratio	95% CI
Age of women:						
15-24 (ref.)	1.000		1.000		1.000	
25-34	1.617***	1.467-1.782	1.348***	1.202-1.513	1.468***	1.341-1.608
35+	1.507***	1.369-1.659	1.207***	1.052-1.368	1.397***	1.257-1.553
Marital status:						
Divorced/separated /widowed (ref.)	1.000		1.000		1.000	
Currently married	1.490***	1.273-1.744	1.555***	1.317-1.837	2.302***	1.971-2.688
Number of living children:						
0 (ref.)	1.000		1.000		1.000	
1-2	2.545***	2.179-2.973	2.225***	1.893-2.616	2.386***	2.076-2.743
3+	3.300***	2.823-3.857	2.518***	2.103-3.017	2.705***	2.319-3.156
Type of place of residence:						
Urban(ref.)	1.000		1.000		1.000	
Rural	1.638***	1.439-1.864	0.771***	0.686-0.867	0.680***	0.621-0.745
Geographical regions:						
Northwest	1.302***	1.190-1.424	1.248***	1.135-1.373	1.356***	1.255-1.464
Chittagong/Sylhet	0.632***	0.567-0.705	0.590***	0.526-0.661	0.736***	0.671-0.807
Dhaka (ref.)	1.000		1.000		1.000	
Education of respondent:						
No education	3.079***	2.509-3.778	1.299	0.997-1.692	1.175	0.957-1.441
Primary	2.934***	2.388-3.607	1.391**	1.088-1.813	1.366***	1.124-1.660
Secondary	1.779***	1.446-2.190	1.200	0.944-1.524	1.317***	1.098-1.578
Higher (ref.)	1.000		1.000		1.000	
Partner's education:						
No education	2.860***	2.473-3.307	1.889***	1.557-2.291	1.968***	1.686-2.298
Primary	2.568***	2.209-2.984	1.832***	1.518-2.211	2.102***	1.813-2.436
Secondary	1.740***	1.493-2.027	1.427***	1.195-1.706	1.587***	1.381-1.824
Higher (ref.)	1.000		1.000		1.000	
Wealth index:						
Poorest	2.486***	2.182-2.832	1.706***	1.435-2.029	2.496***	2.172-2.868
Poorer	2.604***	2.288-2.964	2.009***	1.701-2.373	2.495***	2.185-2.850
Middle	2.304***	2.024-2.623	1.926***	1.639-2.263	2.191***	1.932-2.486
Richer	2.015***	1.770-2.294	1.830***	1.573-2.129	1.648***	1.466-1.853
Richest (ref.)	1.000		1.000		1.000	

Note: *Odds ratio f or reference category (ref.) is 1.00.*
Geographical region: Barishal, Khulna, Rajshahi and Rangpur being considered together as northwest region.
*Statistical significance if ***p<0.000, **p<0.01, and *p<0.05*